

CTO

WebBusiness

Section Two • April 1, 1998

Harley Speeds

FYI

FROM: _____

Attached is a copy of **CTO Web Business**. The articles take a cross-functional look at leveraging the Web to add enterprise value. Thought you might be interested...

TO: _____

TO: _____

TO: _____

TO: _____

TO: _____

ALSO INSIDE

Ira Magaziner
On E-Commerce
The President's
Point Man
Tells Business:
Take The Lead

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Look What Unicenter



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ASSOCIATES
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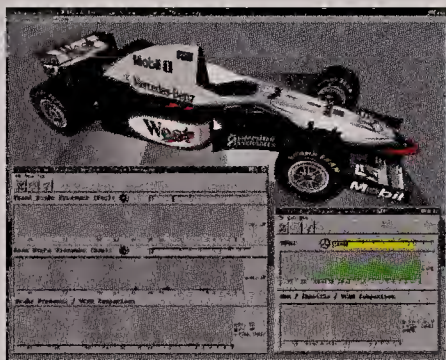
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WebBusiness

VOL. 11 • NO. 12 • APRIL 1, 1998 • 130 PAGES IN 2 SECTIONS
SECTION 2

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The Fast Lane

COVER STORY: INSIDE EXTRANETS Harley-Davidson's extranet makes filing warranty claims, checking recall status and submitting financial statements as easy as cruising the open road. *By Sari Kalin*

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Uncle Sam Wants You

INTERVIEW Presidential advisor Ira C. Magaziner explains the Clinton administration's hands-off approach to the development of Internet commerce. *By Anne Stuart*

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Reading Between the Lines

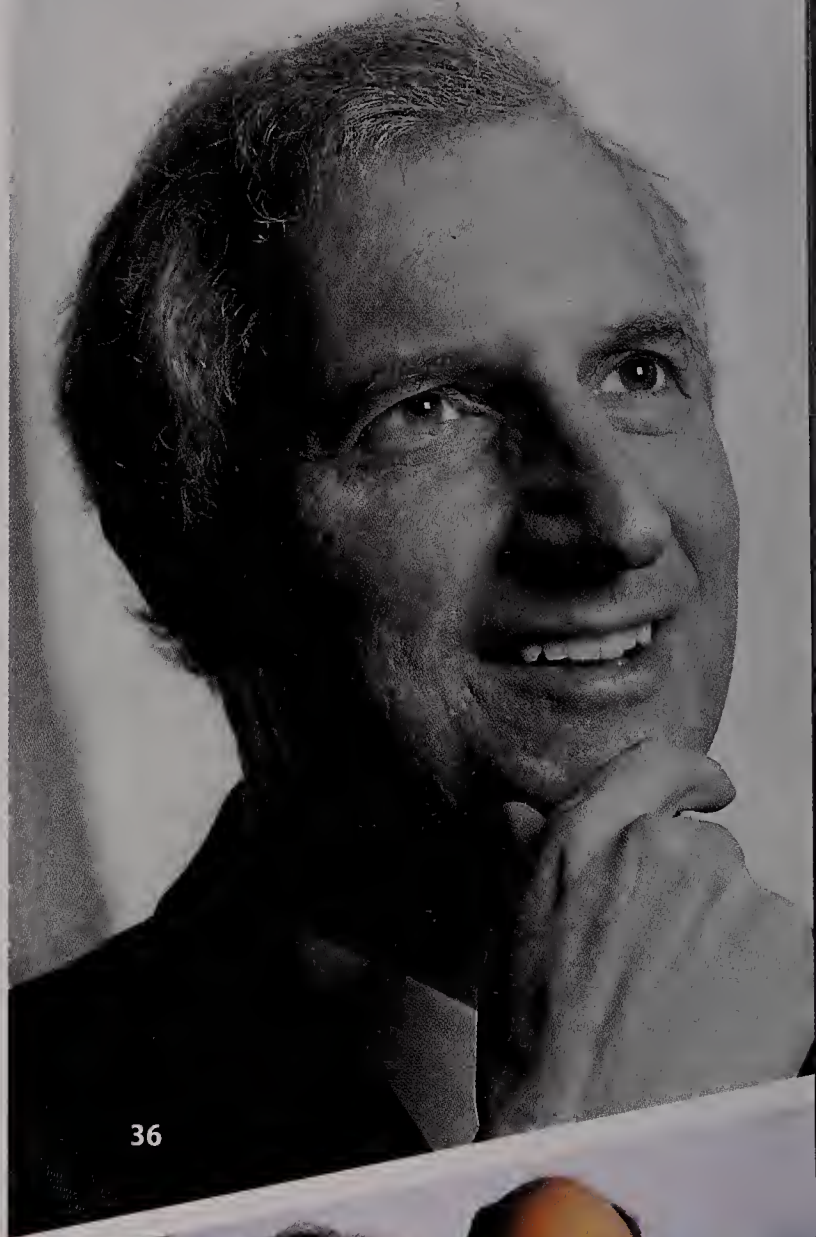
MARKET RESEARCH Market studies of Web commerce may tell only half the story. But which half? Four business school professors suggest a few ways to find out. *By Sari Kalin*

on the cover

Harley-Davidson's h-dnet
opens the throttle
for power moves.



Harley-Davidson's
VP of IS
David Storm
Cover photo by
Marc Berlow





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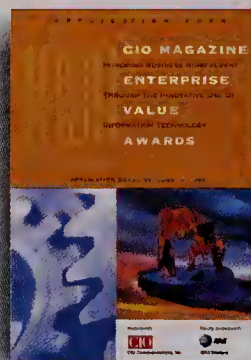
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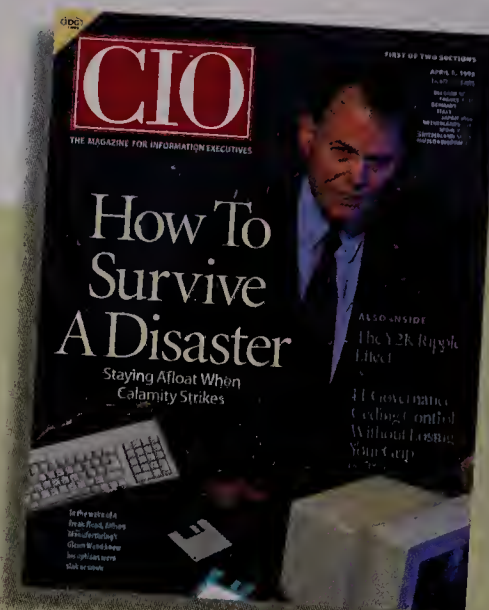
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Enterprise Value Awards application follows Page 6.



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Inside Section 1

COVER STORY: DISASTER RECOVERY

Your computer systems can be the lifeblood of your company. Here's how to make sure you'll be able to recoup your business if a river runs through IT.

I.T. GOVERNANCE Far-flung offices can crunch numbers as fast as headquarters, reviving the old conundrum of how tight IT should hold the reins.

ELECTRONIC COMMERCE Several states accepted the challenge to bring the efficiencies of today's technologies to their huddled masses. These electronic governments are creating new liberties...and just IS for all.

YEAR 2000 CHALLENGE No one is immune to compliance problems.

EMERGING TECHNOLOGY Playing from their strengths, two titans aim to simplify scanning.

SHOP TALK Maine Employers Mutual Insurance Co.'s Gary Baxter on recruiting and retaining staff in remote locations.

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THE ABILITY
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MASTER IT.



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Danger! Danger!

MANY OF YOU WILL HAVE NOTICED THAT *CIO* PUBLISHER GARY BEACH is scaring us to death in Section 1 (see Page 14) by invoking the now-hoary specter of the Millennium Bug—the digital El Niño that in 640 days (Gary's counting) will maroon us in plummeting elevators and airplanes and in the barren vestibules of unforthcoming ATM huts. Gary sees extranets as a source of new liability. He enlists in his mission the postulate developed by Ethernet inventor Bob Metcalfe. Metcalfe's Law says networks are exponentially enriched by each new node that joins them.

Poor Metcalfe! He is busy enough managing his own controversies (remember 1996, the Year of the Internet's Collapse?) without getting dragged into Gary's. But I, too, was present at a recent *CIO* magazine conference when CIOs were polled on their confidence in the prospects for solving the Y2K problem before the deadline. Maybe it was the influence of the monsoon banging at the crumbling California coast, but the crowd—which is in a solid position to know—was decidedly pessimistic. Forty-one percent asserted they wouldn't get on a plane on Jan. 1, 2000. Their gloomy assessment impressed me.

The scent of doom excites us journalists. It definitely excites Gary, who quotes alarming statistics, whooping with amazed laughter over the dreadful enormity of whatever the particular situation happens to be. There are always reasons to be alarmed about something. The Y2K

problem is just one of many such causes.

Gary posits a corollary to Metcalfe's Law that networks can be exponentially *de*-enriched by bug-induced outages of various kinds. Thus, smart extranet proprietors will do well to audit their trading partners' prospects for Y2K compliance and selectively—and ruthlessly—to unsubscribe the losers like so many cyberlepers.

I guess that's arguably a wise and prudent course of action. But I worry that the lurid terms that frame such recommendations may deter some readers from developing Web business capabilities, thereby impairing their competitiveness. As *CIO* Editor in Chief Abbie Lundberg observes in her Y2K letter on Page 10 of Section 1, it might be advisable and advantageous to work with trading partners (assuming you can spare the resources) to help them achieve compliance.

Remember that no one actually knows what the effect of widespread levels of Y2K noncompliance will be. But one of the interesting and so-far uncalculated upfront costs of the Y2K predicament is that the specter of disaster has already deflected investment in other technology initiatives that would have been put to various competitiveness-enhancing purposes. But Y2K compliance is nonoptional. So even in the cause of achieving good hygiene, businesses are incurring untold missed opportunity costs.

Gary is right to advise readers to cover their backsides. But not at the expense of all the days that follow Day 640 (and counting).



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PHOTO BY JERRY MARGOLYCH



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A P P L I C A T I O N F O R M

CIO MAGAZINE

HONORING BUSINESS ACHIEVEMENT

ENTERPRISE

THROUGH THE INNOVATIVE USE OF

VALUE

INFORMATION TECHNOLOGY

AWARDS

APPLICATION DEADLINE: JUNE 15, 1998



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1999

CIO MAGAZINE

HONORING BUSINESS ACHIEVEMENT

ENTERPRISE

THROUGH THE INNOVATIVE USE OF

VALUE

INFORMATION TECHNOLOGY

AWARDSSM

CRITERIA

The CIO Magazine Enterprise Value Awards honor technology-enabled business achievement arising out of effective business/IS collaboration.

Entries will be judged on the following criteria:

- **STRATEGIC IMPACT**
- **CUSTOMER IMPACT**
- **FINANCIAL IMPACT**
- **TECHNICAL EXCELLENCE**

We invite applicants to consider the broadest possible spectrum of enterprise value. The following list of IT-enabled benefits is not inclusive but rather is intended to help guide applicants' thinking:

STRATEGIC IMPACT

- Penetration of new markets
- Transformation of the terms of competition within the market
- Increased market share

CUSTOMER IMPACT

- Customers have more choices of products and services
- Customers receive better products and services at lower cost
- Transaction process is more rewarding/less time-consuming

FINANCIAL IMPACT

- Lower costs due to streamlined operations
- Increased profits
- Increased operational effectiveness

TECHNICAL EXCELLENCE

- Overall technical innovation
- Uniqueness of solution within the organization's industry
- Complexity of the problem or opportunity the system addresses

SELECTION PROCESS

Finalists are chosen by a screening panel of CIO editors and independent consultants. Each finalist will be subject to an in-depth analysis of the nominated system (to be performed by CIO or its agents). This analysis, which may require a site visit, will be based on interviews with sponsoring executives and system users and will be designed to substantiate all claimed benefits. Winners are selected by an independent panel of judges—prominent IT executives from a variety of industries.

IMPORTANT DATES

Deadline: Applications must be received by **June 15, 1998**. Notification of winners will occur in October 1998.

ENTRY GUIDELINES

1. The system must have been fully operational prior to July 1, 1996.
2. Entrants must agree to be featured, along with their systems and organizations, in a CIO article.
3. Entries must be complete.
4. Entries must be on 8.5-by-11-inch paper, one side per sheet.
5. The application form may be reproduced.
6. Up to three entries from one company will be considered, but each entry must be submitted separately. Only one entry per company can win.
7. Entries must be made jointly by the IS executive sponsor AND by the business sponsor for whom the system delivers value.
8. IT vendors, public relations and advertising companies, consultants and other third parties may NOT apply on behalf of another company. They are encouraged to forward this form to the "owner" of the system or to contact CIO Communications to recommend that an application form be sent to the client.
9. All entries must be computer generated or typed; no handwritten entries will be accepted.
10. When feasible, an additional copy of the entry should be sent on a 3.5-inch disk. Electronic entries must be limited to word-processing and spreadsheet packages that are compatible with Microsoft Word and Microsoft Excel.

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For more information, visit our Web site at www.cio.com/eva
or contact Lisa Kerber at 508 935-4449 or via e-mail at kerber@cio.com.

1 COMPANY/BUSINESS UNIT

Name of parent company

City, state where headquarters are located

Publicly or privately held?

Annual revenues

Industry

Name of business unit or organization

City, state where located

Number of employees at business unit

URL

2 ENTRANTS

A. Name of entering IS executive/system sponsor

Title

Name of division, department or unit

Address

City

State

Zip

()

()

Telephone

Fax

E-mail

B. Name of entering business-unit executive/sponsor

Title

Name of division, department or unit

Address

City

State

Zip

()

()

Telephone

Fax

E-mail

3 SUPPORTERS

Please list four people who are willing to be interviewed with regard to the system, its development, its use and the value returned. At least one should be a member of the technology team that developed the system and should have played a significant role. At least one should be a primary user from the sponsoring business unit. The other two may be from either organization or may represent suppliers, customers or others intimately familiar with the system.

A. Name

Title

()

()

Telephone

Fax

E-mail

Reason for inclusion

B. Name

Title

()

()

Telephone

Fax

E-mail

Reason for inclusion

C. Name

Title

()

()

Telephone

Fax

E-mail

Reason for inclusion

D. Name

Title

()

()

Telephone

Fax

E-mail

Reason for inclusion

DEADLINE: JUNE 15, 1998

Mail to: CIO Enterprise Value Awards • CIO Communications, Inc.
492 Old Connecticut Path • P.O. Box 9208 • Framingham, MA 01701-9208
Visit our Web site at www.cio.com/eva

For more-detailed information on the type of data the judges would like to see, including a model application, please visit our Web site at www.cio.com/eva.

4 THE NOMINATED ORGANIZATION

Please tell us about your organization (company, business unit, agency) in 500 words or less. Include information on

- When the organization was founded
- Mission statement
- Major products and services
- Markets served
- Your organization's standing within its industry
- Any other data you believe to be relevant in terms of general background

5 THE NOMINATED SYSTEM

Tell us about the nominated system and demonstrate its importance to the organization by completing the following sections. Please limit your material to one or two pages.

System Description: In one sentence or less, describe the system or IT initiative you are nominating (e.g., order-entry or sales-automation system; global intranet).

Date Deployed: Please indicate when the system was fully rolled out. If all users were not online by **July 1, 1996**, please detail what went live when.

Technical Profile: Briefly describe the technology of the nominated system, including its architecture; hardware, software and development tools used; and networking/communications hardware, software and services. Please include the names of all major vendors and products.

6 EVALUATION CRITERIA

Describe the primary business objectives of and value delivered by the IT investment. Please limit this section to five pages.

Statement of Value: List the three most important contributions the system has made to the business (these can demonstrate strategic, customer or financial impact as described in the "Defining Value" section on the first page of the application form). Please limit this answer to a few hundred words.

Strategic Impact: Define the ways in which the system has had strategic impact and describe in detail how the system delivers that impact. Make sure to include supporting data. For some examples of this, please refer to our Web site at www.cio.com/eva.

Customer Impact: Describe in detail how the system has benefited your customers. You may include examples from the organization's ultimate customers (consumers), the business users of the system, and suppliers or business partners affected by the system.

Financial Impact: Provide a detailed, one-page summary of the nominated system's investment costs (including all upfront development expenses and annual maintenance charges). Also provide details of the financial returns (including increased profits, reduced costs and indirect cost-avoidance). Please be specific about where the money is going/coming from and distinguish between actual and projected costs/returns.

This data is required to make it past the first round of judging. If your company is selected as a finalist, you will be required at that time to fill out a standardized table detailing specific costs and returns.

Technical Excellence: Describe the degree of overall technical innovation of the solution (does it employ cutting-edge technology?); its uniqueness within your industry (is this an industry first or second, or is this a common solution?); and the complexity of the problem or opportunity it addresses. Please be as specific as possible and include supporting data.

7 OTHER CONSIDERATIONS

Scope and Impact: Identify the functions (e.g., customer service, manufacturing, sales) that were changed by the system, the nature of those changes and their impact on the business.

The Importance of IT: Explain the importance of the IT component to the overall business change. Could the results have been achieved without IT?

Collaboration: Describe how the business unit and IS organization worked together throughout the project, from concept to implementation. Who initiated the effort? What were the specific tasks fulfilled by the business unit? By the IS organization?

8 TRUTH OF INFORMATION RELEASE

The following release must be signed by both nominating executives if the application is to be considered. Unsigned releases will invalidate the entry.

I hereby state that the information provided is true and complete to the best of my knowledge and belief.

I authorize the release and use of, in connection with the CIO Enterprise Value Awards program, any and all materials furnished by me or others at the company contacted for this judging. I understand that information submitted on this application or subsequently gathered during the evaluation and judging process may be used in articles or any other type of publicity relating to the CIO Enterprise Value Awards program.

I also authorize the release and use of my name, my company's name and my likeness, including but not limited to any photographs and any recording of my voice or image that may be taken of me for CIO magazine. I agree that no compensation shall be due me or my company for such usage.

I recognize that failure to meet these conditions or to provide sufficient material that can be published can cause the application to be rejected at any point in the process at the sole discretion of the sponsors.

1. Signature of nominating IS executive _____ Date _____

2. Signature of nominating business executive _____ Date _____

9 OTHER EDITORIAL OPPORTUNITIES

If you are not selected as an award recipient, are you willing to be contacted for inclusion in other articles in CIO magazine?

Yes ☐ No ☐

How did you learn about the CIO Enterprise Value Awards program?

- | | |
|--|---|
| ☐ CIO magazine | ☐ Academician |
| ☐ cio.com Web site | ☐ Advertising agency |
| ☐ Consultant | ☐ IS staff member |
| ☐ Systems integrator | ☐ Other publications |
| ☐ PR agency | ☐ Vendor |
| ☐ Other (please identify) _____ | |

CHECKLIST

Have you filled out...?

- ☐ Company/Business-Unit, Entrants and Supporters Information

Have you included on separate pages...?

- ☐ Nominated Organization
☐ Nominated System
☐ Evaluation Criteria
☐ Other Considerations

Have both entrants signed and dated...?

- ☐ Truth of Information/Release

Have you checked off...?

- ☐ Other Editorial Opportunities
☐ How you learned about the CIO Enterprise Value Awards program

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- 1. Strategic Impact**
- 2. Customer Impact**
- 3. Financial Impact**
- 4. Technical Excellence**

If your innovative solution meets the above criteria, please complete this Enterprise Value Awards application form and return it to us no later than June 15, 1998. *CIO* magazine will feature profiles of the winning organizations and the executives who have proved the positive and sustained impact of technology on enterprise value.

In February 1999, CIO and AT&T Solutions will host a special awards ceremony honoring the CIO Enterprise Value Award winners at the annual CIO Enterprise Value Retreat.

For more information, visit our Web site at www.cio.com/eva or contact Lisa Kerber at 508 935-4449 or via e-mail at kerber@cio.com.

CIO Enterprise Value Awards

TIME LINE

Applications Due:
June 15, 1998

Winners Announced:
October 1998

Awards Ceremony:
Jan. 31-Feb. 3, 1999
*at the CIO Enterprise Value Retreat,
Westin La Paloma, Tucson, Arizona*

PREVIOUS WINNERS

1998

Black & Veatch
New York City Department of Finance
Procter & Gamble
State Street Global Advisors
Tech Data Corp.
U.S. Environmental Protection Agency

1997

Bell Atlantic Corp.
The Chase Manhattan Corp.
Fidelity Investments
MacGregor Medical Association
Schlumberger Ltd.

1996

Brigham & Women's Hospital
Gensym Corp.
McDonnell Douglas Helicopter Systems
Rockwell Space Systems Division (SSD)
Telogy Inc.
United HealthCare Corp.

1995

APCOA Inc.
Commonwealth of Massachusetts
PCs Compleat Inc.
Hyatt Hotels & Resorts
Caterpillar Inc.
Kmart Corp.

1994

SynOptics Communications Inc. (now Bay Networks Inc.)
Complete Health Services Inc.
Los Angeles County Department of Public Social Services
AT&T Universal Card Services Corp.
Chicago Bureau of Parking
South Florida Water Management District

1993

The Perrier Group of America Inc.
New York City Transit Authority
Medical Center of Delaware
Texas Instruments
Lone Star Gas Co.
Travelers Managed Care and Employee Benefits Operations

CIO ENTERPRISE VALUE AWARDS

HONORING BUSINESS ACHIEVEMENT THROUGH THE
INNOVATIVE USE OF INFORMATION TECHNOLOGY

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"We feel that we are doing some really creative things with IT here, but it's hard to judge your own shop. We needed an outside benchmark to see if other people thought our IT was as strong as we think it is. Winning the award was reaffirmation from an outsider, which was good for internal morale. It was an objective benchmark of recognition that also reinforced our image in the marketplace."

-Denis O'Leary
Executive Vice President,
The Chase Manhattan Corp.
shown (left) with business sponsor
Frank Lourenso (right) and
Chase's system development team
1997 EVA Winners



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Big

Data is the biggest asset of the information age

Origin of the Business World

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ata

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/bigdata

at the core of your business



SiliconGraphics

registered trademark, Origin, Origin2000, and the Silicon Graphics logo

What's in a Name?

cio.com
http://www.cio.com

A FEW WEEKS AGO, AN INTERNET OFFICIAL NAMED JON POSTEL took unauthorized control over much of the global network's address system.

Mr. Postel operates the Internet Assigned Numbers Authority at the Information Sciences Institute at the University of Southern California. His organization oversees 13 root servers that function as the Internet's version of directory assistance for over a million Internet addresses.



One and only one of these computers is the ultimate authority. All changes and new addresses must be listed on this computer, called server A and run by Network Solutions Inc. (NSI) in Herndon, Va. The other servers respond to directions from this computer.

Mr. Postel sent e-mail messages to the operators of most of the other servers, asking them to begin using one of his computers instead of server A as the ultimate authority on addresses. Eight operators complied.

The Network Solutions contract expires Sept. 30, and the future of the domain name system is not clear.

According to Mr. Postel, his actions

were simply a test to make sure that such a transfer of information is possible, should it be necessary when Network Solutions is no longer in charge of Internet addressing. Many observers were quick to point out that this incident coincided with the release of an administration plan that would reduce the authority of Jon Postel.

The White House claimed there was little need for concern. I disagree. This country and the rest of the world need an Internet reference system that can't be derailed with a few e-mails from one person. It is the government's job to make sure that the reference system is secure and considerably better protected than it has been.

The business world of the 21st century will depend on a safe and secure Internet. Now is the time to take action before a test becomes reality. As always, your comments and opinions are most appreciated.

Joseph L. Levy

Joseph L. Levy
President, CEO and Group Publisher
jlevy@cio.com

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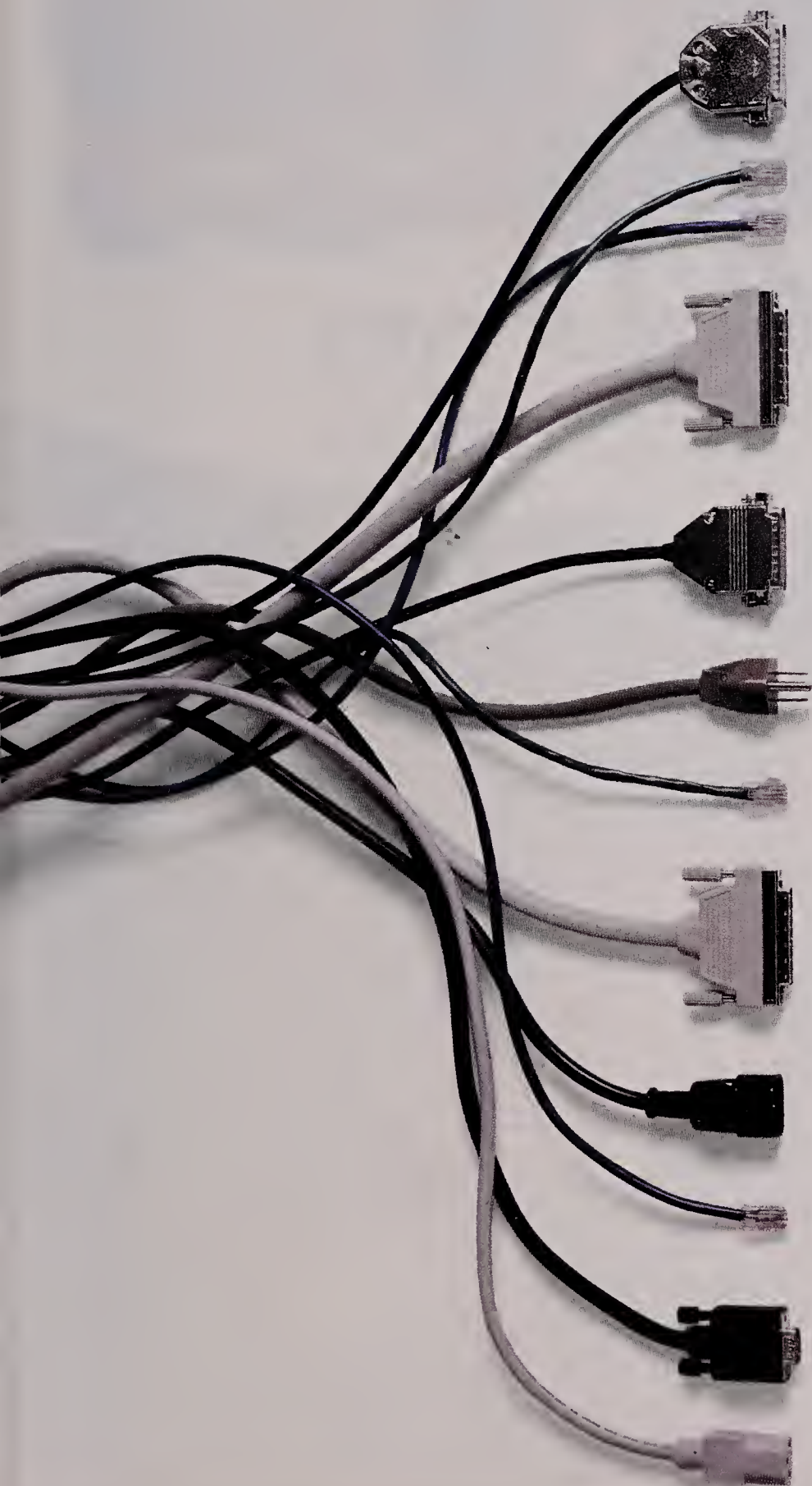
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THREADS

Equitable Transfers

FIRST THE WEB REPLACED real stockbrokers with less costly virtual brokers. Now it's eliminating brokers altogether. At the new Web site of The Equitable Companies Inc. (www.eqshare.com), a major insurance and financial services company, people who own Equitable stock can buy more of the same without the help and cost of a stockbroker. First-time buyers still need to get started offline because the SEC requires the seller to acquire a signature from the buyer, but others can jump right in. In the first month that the site offered the new application, more than 100 people did just that.

Louis Person, vice president of technology for the Media Connection of New York Inc., which built the application for Equitable, admits the site isn't the first to offer direct stock purchases, but he thinks its ability to transfer funds directly from a buyer's bank account to the The Equitable makes it one of the easiest to use. Certainly, its business goal is one of the easiest to understand.

"One of the objectives," explains Person, "was to get people to take money out of savings and put it in The Equitable."
—Art Jahnke



Is This Only a Test?

Why did so many people fail to believe Jon Postel, the ponytailed master of the Internet Assigned Numbers Authority, when he explained that his rerouting of look-up messages from the central directory of all Web site addresses to his computer system at the Information Sciences Institute at USC was only a test? Why did Ira Magaziner, a presidential advisor on Internet issues, call Postel at 3 a.m. from his room in Davos, Switzerland?

Postel claimed that his surreptitious redirection of messages to the ISI's root servers instead of to the servers at Herndon, Va.-based Network Solutions Inc., which has been working since 1993 under government contract as the global registrar for Internet domain names, was merely "a verification that such a procedure can be accomplished smoothly."

But many observers aren't buying it. Some say that Postel plans to add new domain names, with amended suffixes such as ".web" or ".firm." Others interpreted his action as a shot fired over the bow of the bureaucracy that Magaziner represents in the debate over who should govern the Internet. Once the government's contract with Network Solutions expires in September, stewardship of the Internet's central directory is up for grabs, and the Clinton administration's proposal to set up a not-for-profit corporation to take over and to represent commercial, international and technical interest groups could leave Postel out of power for the first time in the history of the Web. Postel now says he supports the Clinton proposal, although he has been lobbying for the Policy Oversight Committee, based in Geneva, well out of the reach of Washington.

—Art Jahnke

The Fast Crowd

Keynote Systems and *Boardwatch Magazine* (www.boardwatch.com) measured the time it took to access and download 50,000 bytes from selected Web sites on 34 Internet backbones in the U.S. and Canada. The overall average time was 10.37 seconds.

Below are the five fastest backbones:

Time in seconds

1. SAVVIS	4.905
2. CWIX	5.008
3. CompuServe	5.664
4. UUNET	5.912
5. MCI	6.347



Having a **Web site** is like having
first several thousand
dates...
every **day.**

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first impressions are often the only
chance you get. The same is true for your Web
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THE INTERNET AT WORK™

Off the CyberShelf

On-Line Profits: A Manager's Guide to Electronic Commerce

Peter G.W. Keen and Craig Ballance
Harvard Business School Press, 1997
\$18.95 paperback, \$34.95 hardcover

PETER KEEN HAS DONE IT again. And again. Keen, author of 13 books exploring the link between information technology and business strategy, teamed up with electronic commerce specialist Craig Ballance to write this timely, no-nonsense guide to doing business online.

Like Keen's earlier books in the

Harvard Business School Press managers series, this isn't a technical manual or how-to book.

It is a glossary, but one that goes far beyond dictionary definitions.

In its introduction *On-Line Profits* provides a straightforward electronic commerce primer, explaining its business significance,

providing background and forecasting the future. The bulk of the book,

though—and the reason people buy this series—is its 234-page glossary, which defines and explains terms ranging from application programming interface to the X.400 and X.500 standards. Many of the 150 entries are, by necessity, technical. A few terms seem conspicuously absent—micropayments, for instance.

But the book discusses business and political issues as well. Look for solid discussions on e-commerce expenditures, legal issues and the U.S. government's regulatory agenda.

Overall, *On-Line Profits* succeeds at what Keen and Ballance say in their introduction they wanted to do: Provide "business managers with a nonhype, nontechnical, reliable and interesting guide to this new business territory."

—Anne Stuart

Try This at Home

For most people, the best part of grocery shopping is stealing a glance at the tabloids in the checkout line. Perhaps that's why recent research by the Consumer Direct Cooperative reveals that people are enamored with the concept of buying groceries online.

The study, "Early Learnings from the Consumer Direct Cooperative," conducted by Andersen Consulting (www.ac.com), predicts that the number of households buying groceries virtually will reach 15 million by 2007. That's a big jump from today's level of fewer than 200,000 households and will add up to \$85 billion in purchases.

"Given the amount of consumer interest and what consumers are willing to pay for goods and services," says Vic Orlor, a partner in Andersen's Strategic Services practice, "we think one in five households will wind up buying some products through the virtual channel."

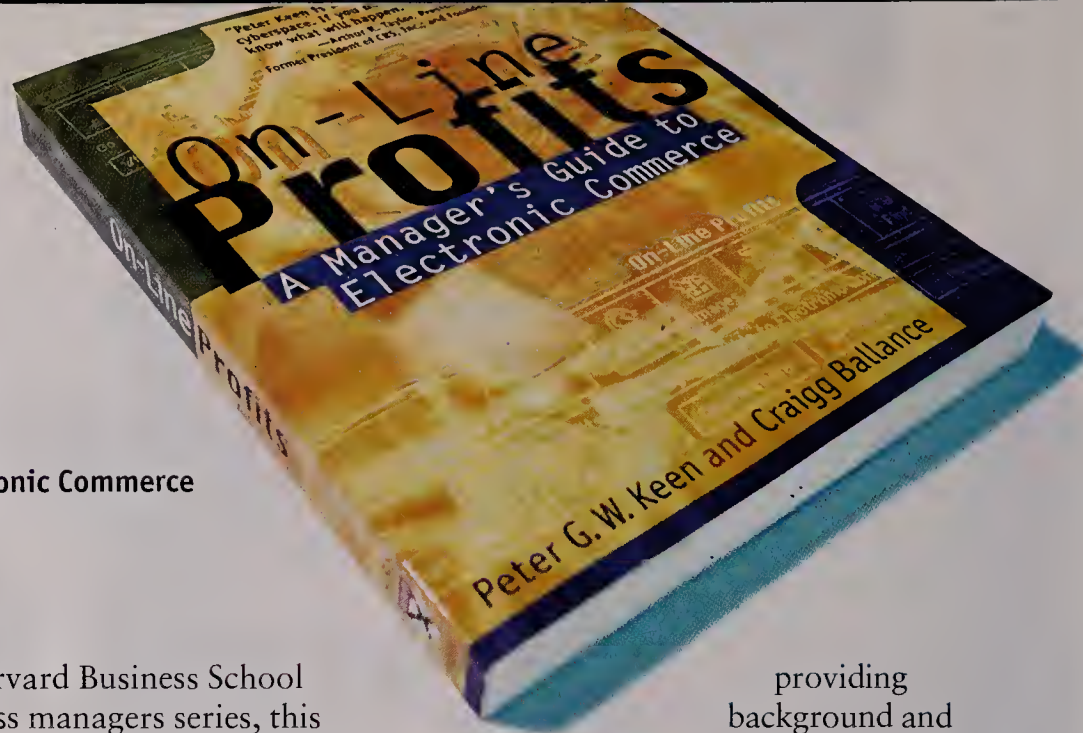
Several companies now offer various flavors of online shopping services.

Streamline (www.streamline.com) based in Westwood, Mass., offers "unattended" delivery of food products, dry cleaning services and more, meaning that customers don't have to be home to receive the products. Streamline delivers orders to the customer's home. Peapod Inc. (www.peapod.com), based in Skokie, Ill., delivers groceries to homes or offices but does require that a human sign for orders. And then there's Groceries to Go Inc. (www.groceriestogo.com), a Somerville, Mass., company that operates a drive-thru center where consumers who order by 10 a.m. can pick up their orders on the way home.

"There are a lot of potential models within the consumer-direct market," says Orlor, "but I don't think any of the current operators have really figured it out yet." For one thing, the needs of the time-starved segment of consumers aren't being addressed because buying online still requires a considerable time commitment, even if it is just sitting at a PC and clicking. One service he sees in the not-too-distant future: intelligent agents automatically compiling grocery lists based on buying habits.

That means that manufacturers may move away from price-based promotions and target consumers through information- or solution-based marketing. A shampoo company, say, could offer to analyze a strand of a consumer's hair and then recommend the most appropriate product.

—Megan Santosus



To Have and Have Not

41.5 million

U.S. adults using the Internet

15.9 million

U.S. adults who tried the Internet in the past year and no longer use it

23.8 million

U.S. adults who say they want to get Internet access in the next year

SOURCE: AMERICAN INTERNET USER SURVEY (WWW.CYBERDIALOGUE.COM)

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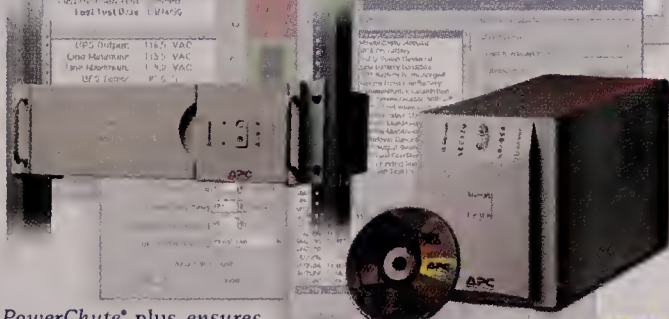
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SEX AND POWER

If we could harness the energy of 14-year-old boys looking up pictures of naked women on the Internet, we could end our country's dependency on fossil fuels.

—Andrew L. Semovitz, president of the Association for Interactive Media, testifying at a Senate Commerce Committee hearing on Internet pornography

E-March on Washington

FOR DECADES, AMERICANS CAMPAIGNING FOR OR against federal legislation rallied others through public demonstrations, bulk mailings and telemarketing campaigns. Now they're banding together over the Internet as well, and their influence is beginning to be felt on Capitol Hill.

Late last year lawmakers credited a virtual coalition of computer users and activists with helping reverse the expected outcome of a vote by the House Commerce Committee. Coalition members used Web sites and e-mail to coordinate opposition to a measure requiring computer software to contain an automatic unscrambling feature.

The FBI lobbied in favor of that feature, which would allow law enforcement officials to decode encrypted messages sent from suspected terrorists or criminals. But a group of committee members led by U.S. Rep. Edward J. Markey (D-Mass.) disagreed, claiming the measure violated user privacy and jeopardized computer security. Mobilized online, activists peppered the committee with telephone calls supporting Markey's position. As a result, the Markey camp, which had been expected to lose the vote, won by a margin of better than 2 to 1.

While that case involved an Internet bill, other lawmakers report hearing from constituents alerted by e-mail campaigns or Web sites on a wide variety of topics. However, although most Congressional delegates now have their own Web pages and staffers assigned to handle incoming e-mail, most protests come the old-fashioned way—by telephone.

—Anne Stuart



ILLUSTRATIONS BY OCTAVIO DIAZ

Hire Learning

Companies that advertise on Internet job boards have long had the ability to track the number of applicants who view their employment listings. Now job-hunters who post their résumés online can do the same thing—at no charge.

Hot Jobs Inc. (www.hotjobs.com) allows applicants to create a password-protected home page for managing their own job searches. From their home pages, applicants can quickly tally how many times their résumés have popped up in employer job searches (although they won't find out exactly who's looking). Using the site's "Hot Lock" feature, job-hunters can also mask their résumés from searches by certain companies—such as the one they're trying to exit.

Personal home pages also create links to each job listing for which their owners have applied, automatically deleting the link when employers fill the position. And Hot Jobs search agents can notify applicants by e-mail every time the site adds new listings matching their skills, experience or interests.

Hot Jobs founder Richard Johnson, previously a technology recruiter for Wall Street firms, says the site's employer clients include AT&T Corp., Cisco Systems Inc., Dow Jones & Co. Inc., Hewlett-Packard Co., National Semiconductor Corp., NationsBank, Oracle Corp. and Sun Microsystems Inc. Hot Jobs receives more than 12 million hits a month, with the average job listing getting nearly 2,900 hits per month. That's a lot of hits and a lot of hope.

—Anne Stuart

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Sticker Shock

FORRESTER RESEARCH INC. (www.forrester.com) of Cambridge, Mass., predicts the price of a typical content site will double to \$6 million by the year 2000.

In the report "What Content Sites Cost," Forrester surveyed managers at 38 content sites, including The Wall Street Journal Interactive Edition (www.wsj.com), Advertising Age (adage.com) and GolfWeb (www.golfweb). Forrester defines content sites as those that "use information and entertainment to attract and retain an audience in order to sell advertising or subscriptions."

Forrester says that as content sites become increasingly dependent on ad revenues, sales and marketing folks wield more power. Yet traditional sales forces are reluctant to sell online ads because commissions are lower than for print and broadcast media. As a result, content sites will come to depend on dedicated

online sales and marketing teams. Forrester predicts costs for a dedicated staff in salaries alone will reach \$1.33 million, up 180 percent from 1997 levels.

As more sites strive to differentiate themselves from their print counterparts, the costs of content—including multimedia functionality—will skyrocket to \$300,000, an increase of 175 percent from 1997.

Technology costs will also be pushed upward due to salary pressures. With an average of three application developers at each content site, Forrester sees staffing costs going up 90 percent to \$640,000. What's more, the increasing sophistication of end users will drive many site managers into the arms of outsourcers for

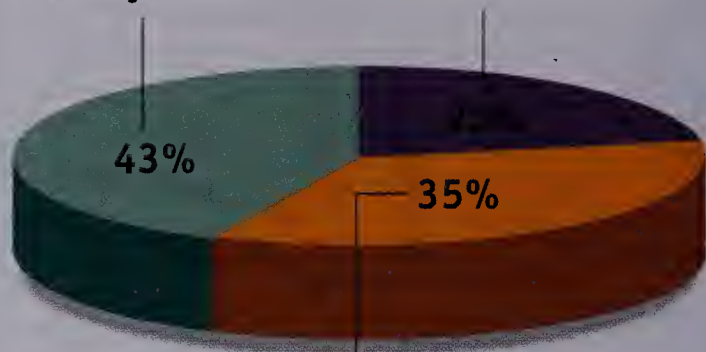
hosting and access services.

Forrester does see one bright spot in the stormy escalation of Web site costs. Even if the average costs balloon to \$6.3 million by 2000, that growth rate will be less than the 300 percent increase that took place from 1995 through 1997.

—Megan Santosus

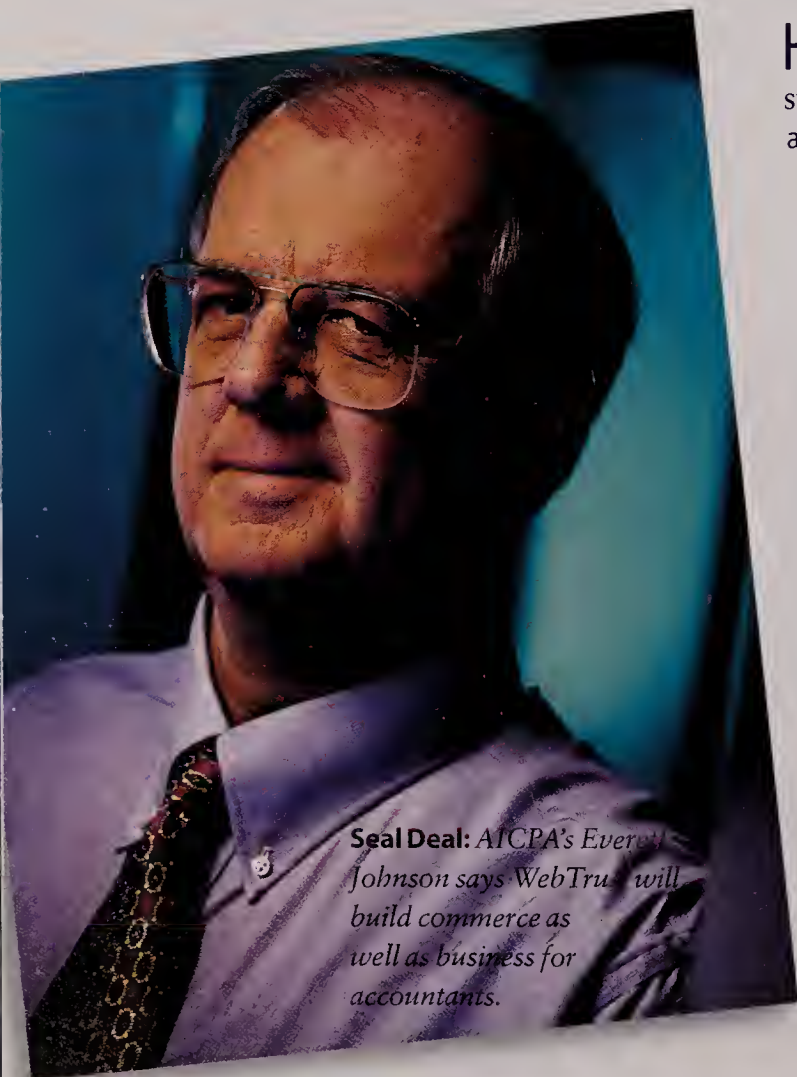
Content: Where It's Coming From

Original content owned by the site* Content licensed or purchased from outside sources



Repurposed content from related media properties

*Percent of overall content on an average Web site as surveyed by Forrester Research Inc.



Seal Deal: AICPA's Everett C. Johnson says WebTrust will build commerce as well as business for accountants.

Help You Can Count On

It's no secret that one of the things standing between Web consumers and Web merchants is a lack of trust. After all, who are those guys selling slightly used sandals on a Web site based in Brazil?

Concerned shoppers may soon take comfort in an unlikely savior. Accountants, hundreds of thousands of them, are racing to our rescue. The plan, put forward by the American Institute of Certified Public Accountants (AICPA) and the Canadian Institute of Chartered Accountants (CICA) is to post a CPA WebTrust seal of approval on Web sites that meet certain standards of sound business practice.

According to Everett C. Johnson, partner and international director of Deloitte & Touche LLP's Enterprise Risk Services and chairman of AICPA's Electronic Commerce Task Force, Web sites seeking approval would have to demonstrate that they meet three standards of good business: They disclose their business practices and follow through on them; they deliver the product or service ordered; and they protect customer information, making sure it is not sold to other businesses.

Sites that pass muster will then be awarded a WebTrust seal of approval, which, when clicked on, will reveal the complete report of the inspecting CPA.

And although no WebTrust seals have yet been issued, response to the plan appears to be positive. "Our research shows that more than three-quarters of online users have a favorable impression of the CPA WebTrust concept," says Johnson.

As good as it may be for business, Johnson concedes, the plan may be even better for the AICPA, whose new responsibilities and imprimatur will soon be spread all over cyberspace.

"It's a win-win-win thing," says Johnson.

—Art Jahnke

record setting



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Dime Novels

*A Pulitzer Prize winner has a big idea:
Sell good writing for small change*

BY ANNE STUART

F

OR AUTHOR BERNARD ASBELL, BYLINES PROVIDED a chance to keep his recently out-of-print history of the birth control pill in circulation. For newspaper reporter John Higgins, it was an avenue into a new genre—nonfiction short-story writing. It gave Lisa Scheid, an insatiable reader, a way to buy two lengthy magazine articles and Higgins' short story for \$1.97. And perhaps most important, it provides a platform for Jon and Lynn Franklin's crusade to see their fellow writers treated more fairly in the new media than they are in the old. They are all part of Bylines (www.bylines.org), a self-described "gallery of fine writing" that's been attracting attention on and off the Web not only for its high-quality content but for its willingness to accept micropayments—transactions of as little as 19 cents—for an online purchase.

For its contributors, the Bylines business model means a little extra money. For now, *very* little extra money—like \$25 or less for the first three months' sales. But the writers whose work is published on Bylines say money isn't their only, or even their primary, motivation. And the writers who run the site say that, while they're selling works for pennies, contributors get 60 percent of each sale—at least four times the cut they'd get from a traditional publisher. All believe, or are at least willing to bet, that the Bylines approach will take off so well that volume sales will more than make up for those low, low prices. Says contributing journalist Michael Lenehan: "There's a sense that you're participating in the future, and if the chips fall the right way, you might make some money."

Bylines is the brainchild of journalist Jon Franklin, a two-time Pulitzer Prize winner who now heads the creative writing program at the University of Oregon in Eugene, and his wife Lynn, a writer who coordinates WriterL, the Franklins' highly regarded listserve, or e-mail discussion group, on literary journalism. Launched in September 1997, Bylines is a truly virtual venture. The third partner, editor George Rodgers, lives in Baltimore. The site itself resides on a commercial server located in St. Louis. Two nonprofit journalism organizations at the University of Missouri School of Journalism in Columbia, Investigative Reporters and Editors and the National Institute for Computer-Assisted Reporting, contribute funding and technical expertise. The site—

don't call it a magazine—sells works from writers nationwide and attracts readers, editors and literary agents worldwide.

The first thing Bylines visitors notice is that there's little to see: The home page is entirely text. The Franklins make no apologies for the no-frills interface. "It's deliberate," says Lynn Franklin, who's responsible for the site's day-to-day operations. Visitors tend to be novice Web users—some venturing onto the Web for the first time after reading about Bylines someplace—with older, hand-me-down computers and slow modems. So for now the site's content must stay simple and load quickly. Besides, Lynn Franklin adds, "We're word people."

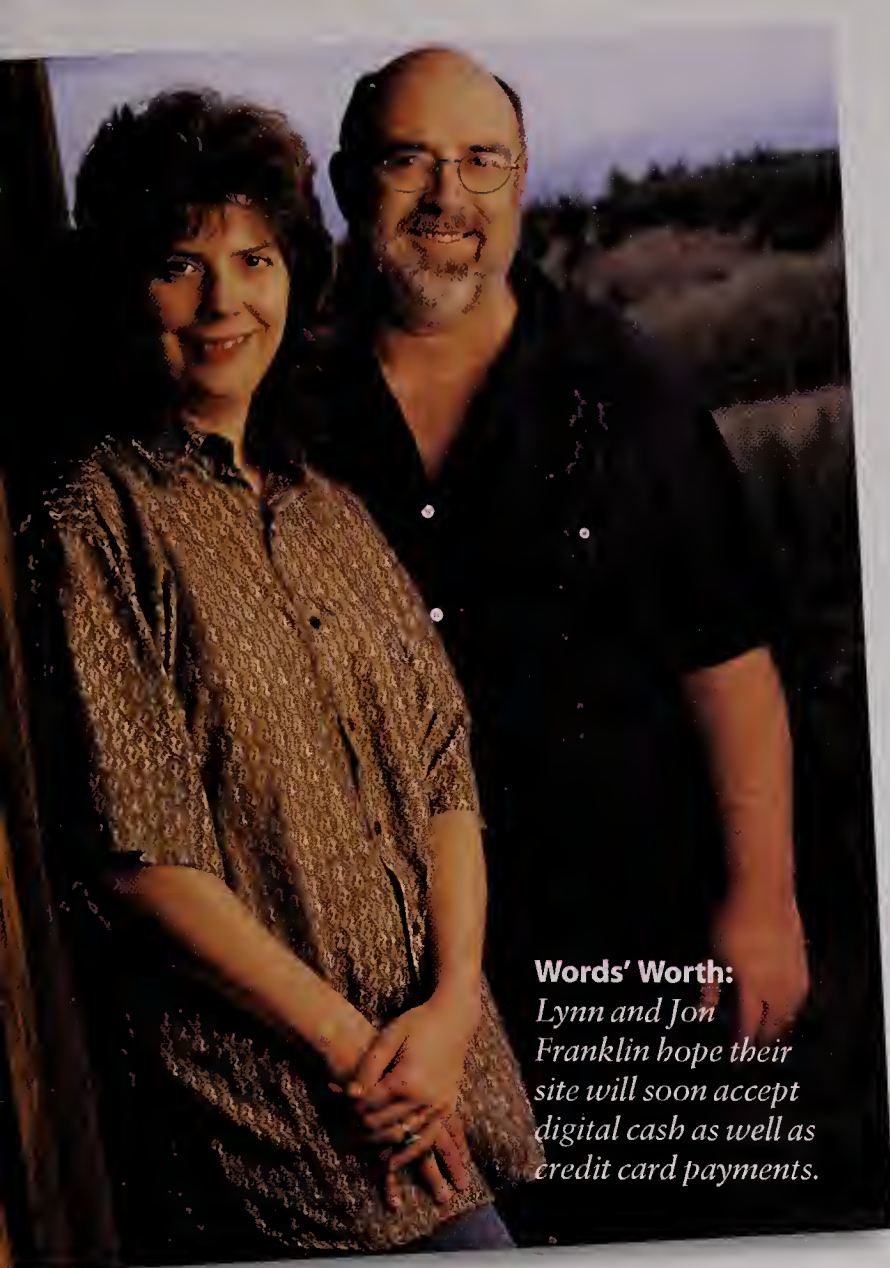
The second thing visitors notice is that, compared with print-media prices, those words are very inexpensive. Prices for the 15 or so selections range from 19 cents for Norman Sims' 9,000-word essay on literary journalism to \$2.50 for Jacques Leslie's 101,000-word Vietnam and Cambodia memoir. In January, a bargain-minded reader could buy everything on the site, including several books, for less than \$25.

The Franklins won't release traffic or revenue figures, but it's clear nobody's getting rich—yet. "I think my [first quarterly] check will be \$24," says David Hayes, a Toronto-based author who published a book chapter on the site.

The \$1.20 that Asbell gets for each online sale is less than a third of the \$3.75, or 15 percent, he earned on his \$25 hardcover. But when his book went out of print, his domestic royalties dropped to near-zero anyway. "My main incentive is that now the book is still out there," he says. Same for Lenehan, whose 18,500-word *Atlantic Monthly* article on the making of a Steinway grand piano, previously available only in 16-year-old copies of the magazine, can be purchased for 79 cents on Bylines. "I saw it as an opportunity to let some of my stories that had died live again," says Lenehan, who wrote an update to accompany the story's digital debut.

Hayes, whose book *Power and Influence* (Key Porter Books, 1992) remains

www.bylines.org



Words' Worth:
Lynn and Jon
Franklin hope their
site will soon accept
digital cash as well as
credit card payments.

in print, saw Bylines as a chance to experiment. "There was this one [book] section that I always thought could have a life of its own," he says. "But where on earth would you put it? Magazines don't necessarily want to publish stuff from a five-year-old book." The 6,500-word excerpt sells for 39 cents on Bylines.

The Franklins wanted to offer an alternative to the traditional New York publishing world, which, facing dwindling sales, has squeezed writers even more than usual lately. "They get only a small percentage of their sales; they've got to jump through hoops to write book proposals, which take almost as much time to write as the book," says Lynn Franklin, whose nonfiction novella "Comfort Me With Apples," published exclusively on Bylines, sells for 99 cents. Some authors have had their books unceremoniously remaindered or pulled out of production and deeply discounted; others have had projects abruptly canceled and have been forced to return advances. And publishers seem largely unwilling to gamble on new ideas and new authors. "The way the book industry is doing it now, they're turning down the best manuscripts, which puts us in a position to get them," says Jon Franklin, whose next book's first appearance will be online. Meanwhile, space

constraints continue to prevent hard-copy magazines and newspapers from publishing lengthy prose. "Writers are used to having to shorten things to fit around the tire ads," Lynn Franklin notes wryly. In cyberspace, of course, no one ever goes out of print. And length is no object.

Beyond that, the Franklins saw Bylines as a way to put writers directly in touch with readers. That's why they opted for by-the-piece sales rather than the ambitious flat-rate subscription model that several publications, including Business Week Online and Microsoft Corp.'s e-zine Slate, announced earlier this year. By letting visitors purchase individual pieces,

the Franklins estimate they can better judge exactly what readers want, shaping the site's future offerings as well as attracting increasing numbers of good writers.

On the Web anybody can be a published writer. And Bylines has yet to feature a big-name blockbuster. But don't make the mistake of assuming the site caters to amateurs, hacks or has-beens. Asbell, three of whose other works have

been bestsellers, recently signed a movie option for *The Pill*. Lenehan is executive editor of the acclaimed weekly *Chicago Reader*. Leslie was a war correspondent with the *Los Angeles Times*. And the editorial team—Rodgers and the Franklins—rejects far more work than it accepts (all evaluations are without charge). "Quality is absolutely the key to it, so we're being really careful," says Jon Franklin, who, in addition to his award-winning medical and science coverage for *The Baltimore Sun*, has authored five books, including the classic guide *Writing for Story* (Atheneum, 1986).

Site revenues depend in large part on visitors following owners' strongly worded warning against unlimited copying. "We remind them that their purchase entitles them to one download, a backup copy and one printed copy," says Lynn Franklin. "And we remind them that if they don't honor this, they're taking money out of the writers' pockets." That was enough for Scheid, who bought two copies of Lynn Franklin's "Apples" novella—one for herself, one for a friend.

Transactions are simple: Readers charge purchases to Visa or MasterCard. Neither has a minimum transaction limit; both charge Bylines 2.5 percent of each sale.

"It doesn't matter to them how little people spend; they still get their cut," Erica Rugullies, a Giga Information Group Inc. electronic commerce analyst, says of the credit card companies.

Ultimately, Bylines' founders hope to offer true microtransactions involving digital cash, an approach analysts call more promising than the credit card model. In the short term, though, they hope multiple sales, repeat customers and sheer volume will offset the cost of processing the cheaper transactions.

Bylines currently takes no advertising, but the Franklins might consider sponsorships if they came with no content strings attached—and didn't further slow downloads.

Bylines evolved from the Franklins' other online business, WriterL, for which

Bylines takes no advertising but might consider sponsorships if they came with no strings attached.

about 370 members currently pay \$17 a year to participate in moderated, edited, high-level conversations about writing.

"I've been involved in a lot of things since I got started in journalism, and I have never been as excited about anything," says Jon Franklin. "This is the beginning of a new world. Every decision we make is a precedent that's going to last for a couple of hundred years. This is fun. This is the vortex. This is where it's happening." **CIO**

Managing Editor Anne Stuart can be reached at astuart@cio.com



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THE MAIN ATTRACTION

Listen Up

Want to know what visitors think of your Web site? Ask them. And then pay attention to what they say.

BY SCOTT KIRSNER

THE BEST WEB SITES DON'T JUST COUNT HITS. THEY listen. Hard.

Hits tell you nothing. So several visitors each request a mess of files from your server: images, pages, audio clips. So what? Did they find what they wanted? How long did it take? What else should you be doing to get them to buy or to transform one-time purchasers into loyal customers?

Those questions have answers only if you give your Web site visitors a way (or, better yet, several ways) to reach you—and get a response. You can field surveys and collect e-mail messages. Hold focus groups. Offer selected users a sneak peek of your next-generation site design and get their input.

At Preview Travel Inc. in San Francisco (www.previewtravel.com), an online travel and vacation service for individuals and small businesses, Vice President of Product Marketing Sharlene Wang has the ethos nailed: "We consider our customers part of our development team." Preview practically begs for user feedback. Customers taking their first trip booked with the service return home to find an e-mail message surveying them about their experiences.

Commerce sites like Preview and subscription sites like SportsLine USA Inc. (cbs.sportsline.com), in Fort Lauderdale, Fla., which competes with ESPN SportsZone for the loyalty of online sports junkies, are among the Web's best listeners. They have to be. "Our revenues are derived from people visiting our site," says Kenneth Dotson, SportsLine's vice president of marketing. "Without happy customers and repeat customers, we don't have a viable business." To involve visitors, the site regularly solicits their opinions through online polls and even invites visitors to suggest their own topics for future polls.

Content sites, corporate information sites and even intranet sites will have to adopt Dotson's doctrine if they hope to survive and thrive. Listen up, or risk losing your audience.

Who Is the User?

If you want to be a good listener, you must first figure out whom you're listening to. Terry Swack, CEO and founder of the Boston Internet product design firm TSDesign (www.tsdesign.com) talks about developing "archetypal profiles" of different kinds of users. Among the questions you need to answer: What are the users' information requirements? How did they arrive at the site? Are they looking for a leisurely browsing experience or the fastest path to the data they need?

For instance, when Compelling Content (www.compelling.com), a New

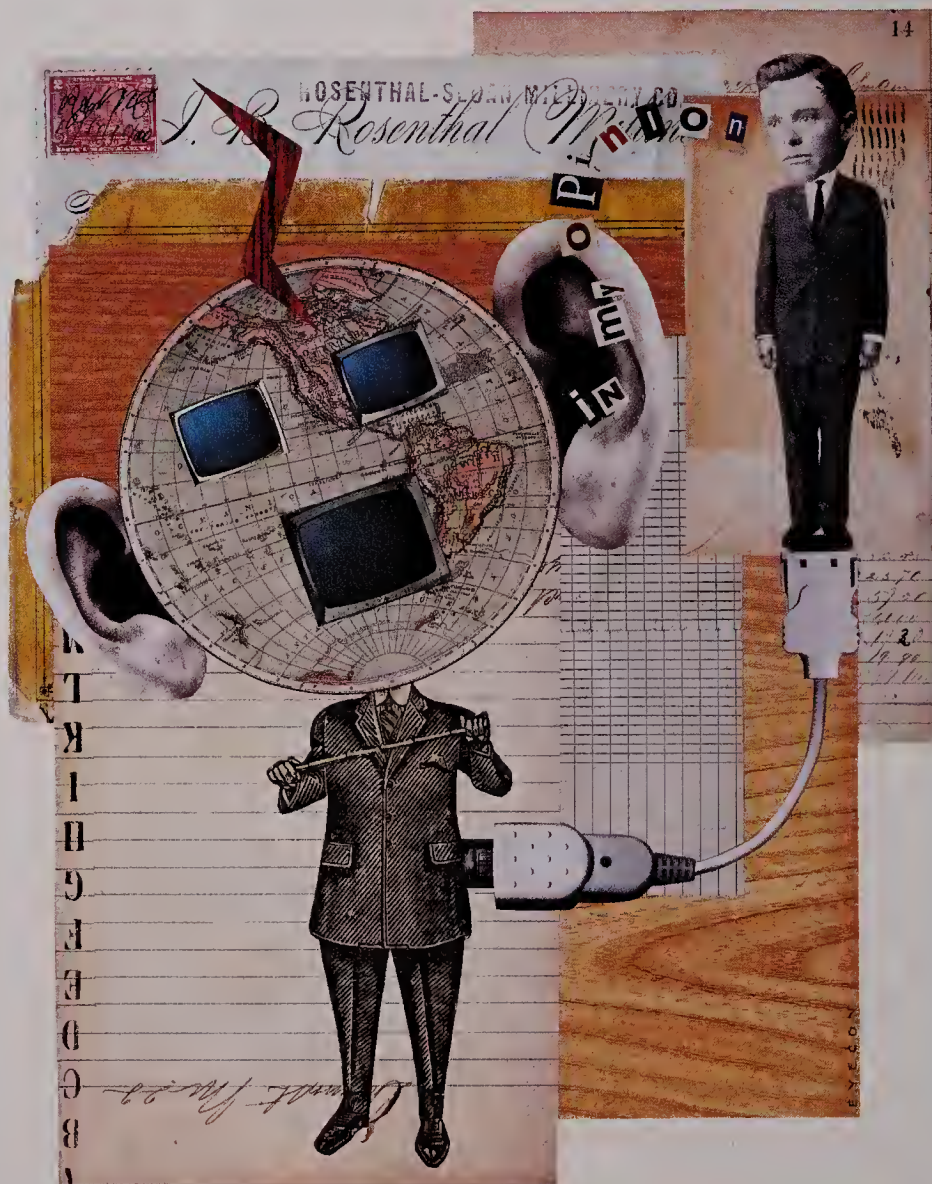
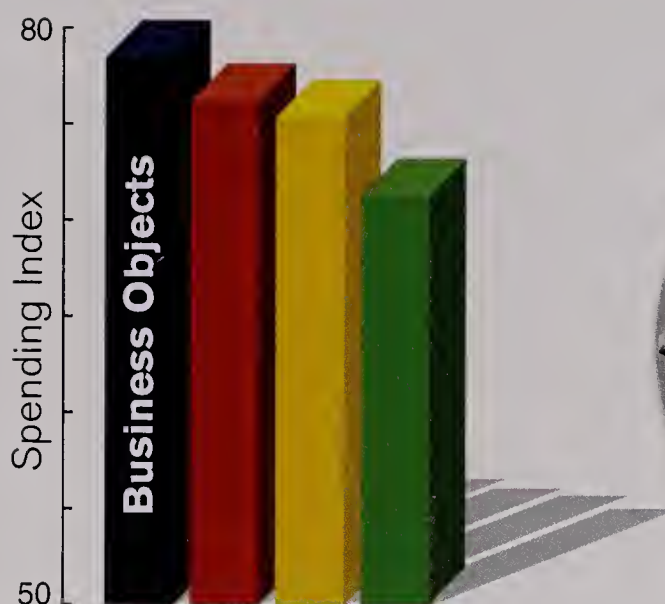


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*Soundview Financial Business Intelligence Spending Survey, November 1997

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York City-based Web developer, built the first-generation site for Royal Caribbean Cruises Ltd. (www.compelling.com/rccframe.html), it first identified the various user segments the cruise line's site would serve. There were travel agents, people who had never cruised before, people who were die-hard cruisers, and the investment community that follows Royal Caribbean's stock. As a result, the home page lists sections clearly targeted to the company's different constituents.

Then you have to ask a lot of questions. Marshall Karp, president and CEO of Compelling Content, asks, "What can my Web site offer them that is different from what they can get anywhere else? And what can I do so that I don't have a one-night stand with them—how can I start a relationship?"

Swack says it's dangerous to assume that you understand how your users want the Web site to work. "You have to craft a site based on the intentions that the users have in coming, the needs that they have and your business objectives for that particular type of person," she says.

Swack, whose client list includes Dell Computer Corp., United Parcel Service of America Inc., 3M Corp. and Forrester Research Inc., says most Web sites are designed and redesigned by committees with so many internal voices vying for input that there's no room for the voice of the customer. It's best to limit the size of your Web design team and provide an avenue for customer feedback.

Existing versus Original Data about Users

You can select from a broad range of ways to build customer response into your Web development process. The most basic is encouraging and responding promptly to customer e-mail feedback. You can also set up bulletin boards for public comments about your site, conduct focus groups and surveys, and talk to site users at trade shows and conferences.

But expensive custom research isn't always necessary to learn about the target audience. Karp of Compelling Content recommends first taking advantage of existing in-house information about different customer types. It's likely, for example, that marketers at Royal Caribbean knew a great deal about communicating with travel agents—and the questions that segment has about the

company and its products—that could inform the cruise line's Web development team.

When Web developers at Eastman Kodak Co. (www.kodak.com) dove into a major redesign last year, they conducted interviews with managers at various company business units about their customers' needs. "We found people within the company who were really plugged in to segments like health care, motion pictures and scientific imaging," says Jack Yu, a usability engineer at Kodak.com in Rochester, N.Y. But in addition to tuning in to existing wisdom

If you don't listen to your audience, you risk losing them.

about the customers, the Kodak developers gathered a heap of original data.

Wayne Neale, the director of the Customer Experience Group at Kodak.com that includes Yu, says the original research began by "analyzing the site from a behavioral point of view: What are people browsing for, how are they browsing, what key words are they searching for?" Neale's team pored over server logs and lists of commonly searched key words to try to give the Web developers a sense of what users sought and whether they were finding it.

As Kodak designers tinkered with the site, Neale's Customer Experience Group held focus groups, trying to identify new kinds of content customers wanted. When the designers had preliminary maps of the new site's layout, the Customer Experience Group held usability tests. "We gave people a set of tasks, and tried to find out if the new structure of the site made sense to them; [for instance,] were all the links logical and in the right place?" explains Yu.

Once a polished version of the new home page had been created, Kodak tried something unusual. It created a link on its existing Web site, offering users a chance to "preview" the redesign. People who followed the link got a peek at the new home page and were asked to answer sur-

vey questions: Did the new design appeal to them? How did it compare to the old one? After an initial wave of comments, Kodak's designers made some design and navigation changes. The second draft got higher ratings than the first: More than 90 percent of respondents said they liked it better than the existing home page.

Innovative Listeners

Kodak seems to have hit on an innovative, cost-effective way to make users part of the development team. And it makes sense. What better tool than the Web itself to let users voice their views? Swack of TSDesign expects this technique to be adopted more widely.

"If you have an active traffic flow to your site, you can build online focus groups [by saying] 'Sign up if you'd like to help us test new ideas.' Then you can send them e-mail or even call them and ask them to participate in reviewing new designs or new features," Swack says.

But what about the people who don't yet know—or care—about your site? It's important to cock an ear in their direction as well. "You need to listen to your broader target audience," says Nick Nyhan, managing director of Decision-Tree Inc. (www.decisiontree.com), a New York City firm specializing in online attitudinal research and strategic consulting. You can't get enough information about your site just from the visitors. It's like standing in your shop and asking people why they like shopping there. You need to get out into the street."

That perspective is important to Mary-Kay Demetriou, director of marketing of CareerPath.com (www.careerpath.com), a job site based in Los Angeles that contains listings from 60 U.S. newspapers. Three times a year, CareerPath conducts combination phone/online surveys seeking to reach both nonusers and current users.

What's the ROI of listening? Simple. Users who have input want a site to succeed. They visit more often and stay longer. They see more ads and spend more money. "Having a site that people can use and find relevant is a key differentiator," says Kodak's Neale. "We have gotten really good returns." **CIO**

Scott Kirsner writes about technology and business. He can be reached at kirsner@worldnet.att.net.

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THE *fast*

Harley-Davidson's extranet makes filing warranty claims, checking recall status and submitting financial statements as easy as cruising the open road

LANE

BY SARI KALIN



image of a lone biker on a smooth ribbon of blacktop. Harley-Davidson dealer Russ

Hampton can tell you it's no fun to go it alone. At least not when it comes to your dealership management system. Hampton's Warwick, R.I.-based dealership runs many business transactions from point-of-sale terminals to payables on software that cannot talk to Harley-Davidson Inc.'s Milwaukee headquarters.

The software does a fine job of keeping Hampton's Ocean State Harley-Davidson Inc. rumbling along. He sold 270 hogs in the 1997 model year, and with the king of the road in hot demand,

he has presold nearly all his stock through mid-1999. But with his data chained up in his own LAN, Hampton says doing business with the motor

company was hardly easy riding. Getting an answer to a simple question about a Fat Boy's part recall history, for example, meant leaving a voice mail message in Milwaukee that could take days to be answered. Getting

credited for an Electra Glide warranty repair could take a month or more after filling out and mailing in an old-fashioned paper form. "We were beginning to feel like a red-headed stepchild," Hampton says, his voice softened by a Tennessee twang.

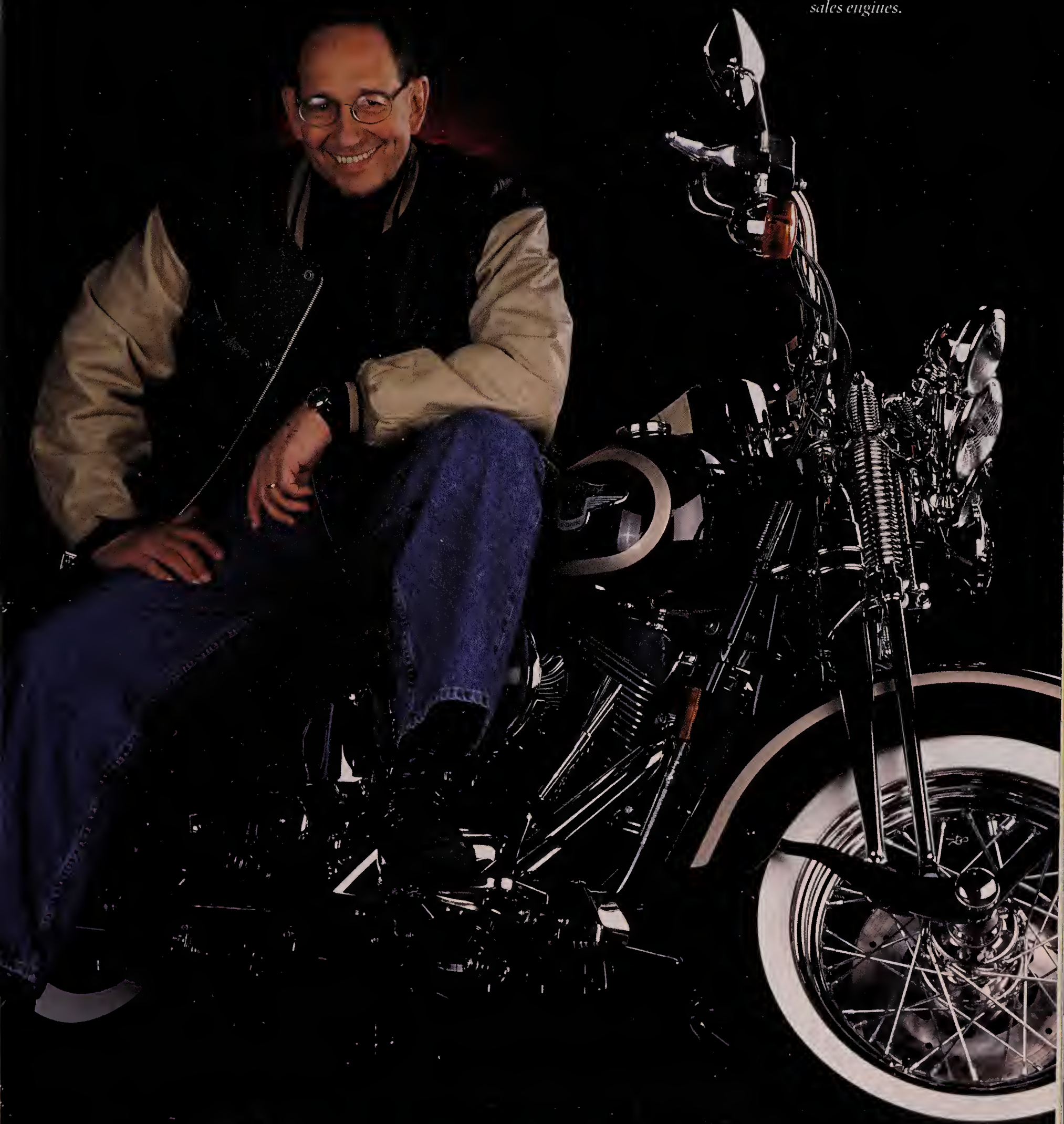
Reader ROI

IN THIS ARTICLE, READERS WILL LEARN

- ▶ How a Web-based extranet can be used with a private network without conflict or redundancy
- ▶ How listening to users can help develop valuable applications
- ▶ The benefits of letting users adopt a network at their own speed

Electric Start:

David Storin, VP of IS, says information systems changes were a major part of Harley's effort to rev up sales engines.





"TO THE OUTSIDE WORLD THIS IS A PIZZA COMPANY. TO ME, IT'S AN ENTERPRISE N

NET PROFILES

MATTHEW MAGUIRE

038

DIRECTOR,
INFORMATION TECHNOLOGY

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Making Talk Cheap:

Harley's h-dnet made it easy for Bob Blackburn (right), service administrator at Hal's Harley-Davidson in suburban Milwaukee, to contact Dan Snell (left), director of worldwide customer service and training.



Now, thanks to Harley-Davidson's recent Web initiative, Hampton is feeling less like an outsider. The \$1.5 billion motorcycle company has developed an extranet, called h-dnet.com, that lets dealers like Hampton file warranty claims, check recall status and submit financial statements. Soon it will also be used to order parts and accessories. All of these hard-core transactions, previously available only to dealers who used client/server systems that could talk to Harley-Davidson headquarters, can now be done via a Web browser. Dealers can also search for "soft" data—anything from exploded-view engine diagrams to executive press releases—and they can request to have technical service documents faxed to them from their h-dnet connection. Hampton says he's happier now; his routine warranty claims are pro-

cessed within 48 hours, and he rarely has to make that call to Milwaukee. Harley-Davidson folks say they're happier, too. Welding Web technology onto the company's back-end systems has been a relatively inexpensive way to deliver a 24/7 application to dealers whose computers cruise beyond Harley-Davidson's control.

A growing gang of companies like Harley-Davidson see extranets as a way to streamline communication with their partners. A July 1997 Forrester Research Inc. survey of 50 Fortune 1000 network managers found that demand for extranets

The Wheeler-Dealer

HARLEY-DAVIDSON INC. AT A GLANCE

Founded:	1903
Headquarters:	Milwaukee
1996 Net Sales:	\$1.53 billion
1996 Net Income:	\$166 million
Business Units:	Harley-Davidson Motor Co., Eaglemark Financial Services Inc.
Number of Employees:	5,000
Number of Dealers:	1,100 worldwide
Number of Motorcycles Produced per Year:	118,000 in 1996; targeting 200,000 by 2003



was coming from internal business units, such as marketing, as well as from external customers. Spurred on by the promise of easier, less-costly communication with partners, 54 percent of interviewees said they planned to use the Internet for partner communication within the next two years, while 66 percent planned to use it for transactions. Meanwhile, The Yankee Group projects that U.S. business-to-business extranet transactions will grow from 4.3 million in 1997 to just over 120 million in 2000. A closer look at h-dnet's development and its early payoffs shows why companies might want to ride down the extranet road.

EVEN BEFORE THE WEB ROLLED INTO TOWN, HARLEY-
Davidson had been communicating electronically with its dealers. In 1989 the company bought Cycom Business Systems Inc., makers of a software and hardware package used by a sizable chunk of Harley-Davidson dealers and other companies in the motorcycle business. The wholly owned subsidiary (recently renamed Harley-Davidson Dealer Services) now sells a home-grown DOS-based system called Talon. Today, over half of the country's more than 600 dealers use Talon to manage their businesses, including among its features point-of-sale, accounting and service scheduling. They can also have two-way electronic communications with Harley-Davidson, sending orders, warranty claims, quarterly financial statements and other information to headquarters over a dial-up connection through CompuServe Inc.'s private network.

Laurel Tschurwald, Harley-Davidson's director of IS, says that Talon is the company's preferred way of keeping an electronic grip on its dealers, although dealers are not required to use it. Some smaller dealerships don't use computers at all. Other dealers, like Hampton, manage their dealerships with other commercially available dealer management systems. Harley-Davidson also makes its factory-to-dealer electronic connectivity specifications available to other software vendors, so their software can communicate with headquarters, although most of the competitors have not gone beyond offering online ordering capability. As a result, many dealers still rely on old-fashioned paper warranty claim forms—something that came as a shock to Dan Snell

Corey says the extranet cost well under \$1 million. Had it been built as a client/server application, he says, it could have cost \$5 million.



when he was hired as director of worldwide customer service and training in 1995. Paper warranty claim forms have several drawbacks, says Snell, both for the motor company and its dealers. To a warranty specialist like Laurie Wal-ecki, who works in the company's World War I-vintage, factory-style brick headquarters, paper forms mean straining to read dealers' handwriting, keying in strings of vehicle identification numbers and parts codes, and calling or faxing dealers to fix errors. The longer it takes claims to get processed, Snell says, the longer it takes engineers to learn what went wrong and how they can make sure it doesn't happen again. "Our objective," says Snell, "is not to have warranty claims."

And dealers who file paper forms have no way of checking the status of a claim, other than phoning the corporate office between 8 a.m. and 4:30 p.m. Central Time—not always the most convenient hours for businesses that close late on weeknights and are open all day Saturdays. Reimbursement delays didn't prevent Hampton from fixing customers' bikes,

but Hampton says the delays were throwing a wrench in his relationship with Harley-Davidson. "We had complained," says Hampton, "and we were told, 'That's the way we do business.'"

In 1995 Harley-Davidson began looking at how it might change the way it did business. That's when it laid the groundwork for a manufacturing milestone timed to its 100th anniversary: boosting production from 118,000 motorcycles per year in 1996 to 200,000 motorcycles per year in the centennial year of 2003. Using IS to make it easier for dealers, suppliers and customers to do business with Harley-Davidson was to be a crucial part of revving up the manufacturing and sales engines, says David Storm, vice president for information systems logistics and strategic planning, who led the planning effort.

In March 1996 Harley-Davidson's customer service group gave IS a mandate: Find a way to get non-

Talon dealers to submit warranty claims electronically and have a prototype ready by the end of the year. IS could have gone about the project the old-fashioned way: Write a little client application, send it out on

Harley-Davidson's Advice for Extranet Riders

RULES OF THE ROAD

- 1.** Commit to electronic commerce from the top down.
- 2.** Start simple. Harley-Davidson used the Web to link dealers to a transactional application—warranty processing—that it had already automated once. The publishing application linked to existing resources; it was comparatively easy to do and it could draw all dealers to the site.
- 3.** Involve users early and often. Dealers' input persuaded the company to add useful applications, such as one that lets them key in a bike's vehicle information number and find out instantly if recall repairs have been made on it.



diskettes to all dealers who did not use Talon, and let them dial in over a private network to send in their data. But that would have put them in the software distribution business—a business they did not want to touch, given that they have no control over what platforms the non-Talon dealers run. “It just would have been a big nightmare,” says Steve St. Thomas, senior systems manager at the motor company.

Enter the Web. Federal Express Corp. had already shown how the Web could be used to open legacy applications to customers via its external Web site’s package tracking application. A Web-technology-based system had an immediate appeal to IS, since having all the software on the server side would make the application easier to maintain and would eliminate software distribution issues, St. Thomas says. And to folks in Harley-Davidson’s communications department, who were already familiar with the Web because of their work on the company’s external site, an extranet offered a way to improve communication with all dealers. Dealer letters, product updates, info on the upcoming 95th anniversary celebration—all could be made available on the Web. The Web could also make one of the company’s key service support applications—a fax-on-demand system for some 2,000 technical service documents—easier to use.

The longer it takes for claims to get processed, the longer it takes engineers to learn what went wrong and how they can make sure it doesn’t happen again.



Harley-Davidson employees visited other companies, such as nearby Snap-on Inc., to learn about intranets and extranets. The motorcycle company was even more sold on the Web, says St. Thomas, after one of its IS workers saw a presentation by Fetch Interactive Inc., a Milwaukee systems integrator. Fetch demonstrated how a client who used AS/400s—the same hardware that Harley-Davidson uses—had Web-enabled its applications. Fetch, later acquired by Santa Clara, Calif.-based USWeb, was already doing some networking work for Harley-Davidson, so it was a natural choice for building and hosting Harley’s extranet.

IT TOOK FOUR MONTHS AND TWO PEOPLE, ONE FROM Harley and one from USWeb, to build the warranty and technical service document applications. The warranty application took the bulk of the effort, says Ken Ostermann, manager of interactive communications. Today, USWeb hosts the h-dnet Web server, which is connected via a dedicated line to Harley-Davidson’s internal network. The Web server taps Harley-Davidson’s AS/400s as well as a file server that holds technical service documents and had initially been set up as a fax-on-demand system. The extranet site is password protected.

The h-dnet prototype premiered at Harley-Davidson’s

In Gear: Ken Ostermann (left), manager of interactive communications, Laurel Tschurwald, director of IS, and Steve St. Thomas, senior systems manager, worked together putting news about the company’s 95th anniversary on the Web.



January 1997 dealer meeting. President and CEO Jeff Bleustein and other company executives talked it up during their keynote addresses, and the h-dnet team began recruiting users for a pilot. One was Bob Blackburn, service administrator at Hal's Harley-Davidson Inc., located in a suburb of Milwaukee. During the pilot, Blackburn found that filing claims directly to the AS/400 was slow going; he would submit a page and wait 30 seconds, 1 minute, even 5 minutes for a response. So the h-dnet team decided to replicate AS/400 data to a SQL server at USWeb, speeding claim submission times over the Internet and ensuring that the system would be up 24 hours a day, even when the AS/400s were down for routine maintenance and backups.

H-dnet's designers visited several pilot users and watched them click through the site to make sure the navigation was intuitive. "When you get an AOL diskette with your bag of peanuts on your Northwest flight with the suggestion, 'Install it and start surfing,'" Tschurwald says, "that's how easy this needed to be."

The designers also sought input internally from people like Walecki, who had never used a Web browser before. They adopted her suggestion to give h-dnet an error-checking feature that Talon does not have to cut down on the number of bounced-back claims.

The h-dnet team timed the full rollout for the next dealer meeting in July 1997. To make signing on extra easy, Harley-Davidson developed "h-dnet in a box." The slick package included a CD-ROM with a copy of Microsoft's Internet Explorer and signup software for AT&T WorldNet. A video portrays dealers using h-dnet from a service office or a hotel room with a reassuring voice-over that promises, "You don't have to be a computer geek to get started."

Six months after the launch, with just over half of Harley-Davidson's 600 U.S. dealerships signed up for h-dnet, the warranty department had already noticed the difference, says Sarah Otallah, manager of warranty administration. The percentage of claims filed electronically from dealers worldwide grew from 52.2 percent in 1996 to 61.4 percent in 1997. More than a third of that increase came from claims filed via h-dnet—not bad given that h-dnet was rolled out only to U.S. dealers and only in the second half of the year.

To date, says Steve Piehl, Harley-Davidson's director of communications, the company has spent less than \$1 million developing h-dnet. Tobey Corey, president of USWeb, is quick to point out that a traditional client/server application to accomplish the same thing could have cost \$5 million. Storm says the company views the project as a cost of doing business, just as it does the cost of, say, supporting the financial systems in-house.

For all its promise, Tschurwald says, h-dnet is not intended to replace Talon, a far more robust and well-integrated system and one that a dealer can use to run everything from point-of-sale to service scheduling. As h-dnet grows in functionality, Harley-Davidson may seek to share some of the costs with its users. And as the Internet becomes more reliable and secure, Tschurwald's group may revamp Talon to take advantage of the Internet's communications capabilities.

This year's goal for h-dnet is to get three-quarters of the U.S. dealers signed on, says Piehl. The challenge will be to broaden its use within the dealership, even at Talon-using dealerships that don't need the system for day-to-day business transactions. There are also plans to start offering h-dnet to dealers outside the United States and to offer new applications such as registration for Harley-Davidson University dealer training classes.

Longer term, the customer service group's goal is to increase electronic warranty submissions by 15 to 20 percent a year until all claims are submitted electronically. Harley-Davidson is considering offering computerization incentives, Storm says. Mandating computer connectivity would not go over well with the dealers, given that they are independent business owners. Giving out free PCs could perhaps work, but only if the dealer would be required to commit resources in some other way, such as sending a few employees to Milwaukee for training.

Despite these challenges, Snell envisions the Web and h-dnet playing an increasingly important role. Someday perhaps a dealer like Ocean State Harley-Davidson will be using the Web to share digital photos or videos of bike problems with the engineers in Milwaukee. "When you look at what [we've] said we're going to do by 2003, we've got to leverage every tool we can," Snell says. "The Web is...key to our future." **CIO**

Senior Writer Sari Kalin can be reached at skalin@cio.com.

Harley-Davidson's Toolbox

DataMirrorCorp.'s DataMirror server (replicates AS/400 data to the Microsoft SQL Server)

IBM Corp. AS/400

Microsoft Corp. Index Server

Microsoft Internet Explorer 3.0 or higher or Netscape Communications Corp.'s Navigator 3.0 or higher

Microsoft Internet Information Server 3.0 with Active Server Pages running on Windows NT 4.0

Microsoft SNA Server 3.0

Microsoft SQL Server 6.5

Microsoft Visual InterDev Web site development tool

Novell Inc. File Server 4.1 (holds fax-on-demand service information)

Ramp Networks Inc. WebRamp multiuser Internet access tool (enables Talon dealers to have access to h-dnet on multiple terminals)

Uncle Sam Wants You

...to lead the development of Internet commerce.

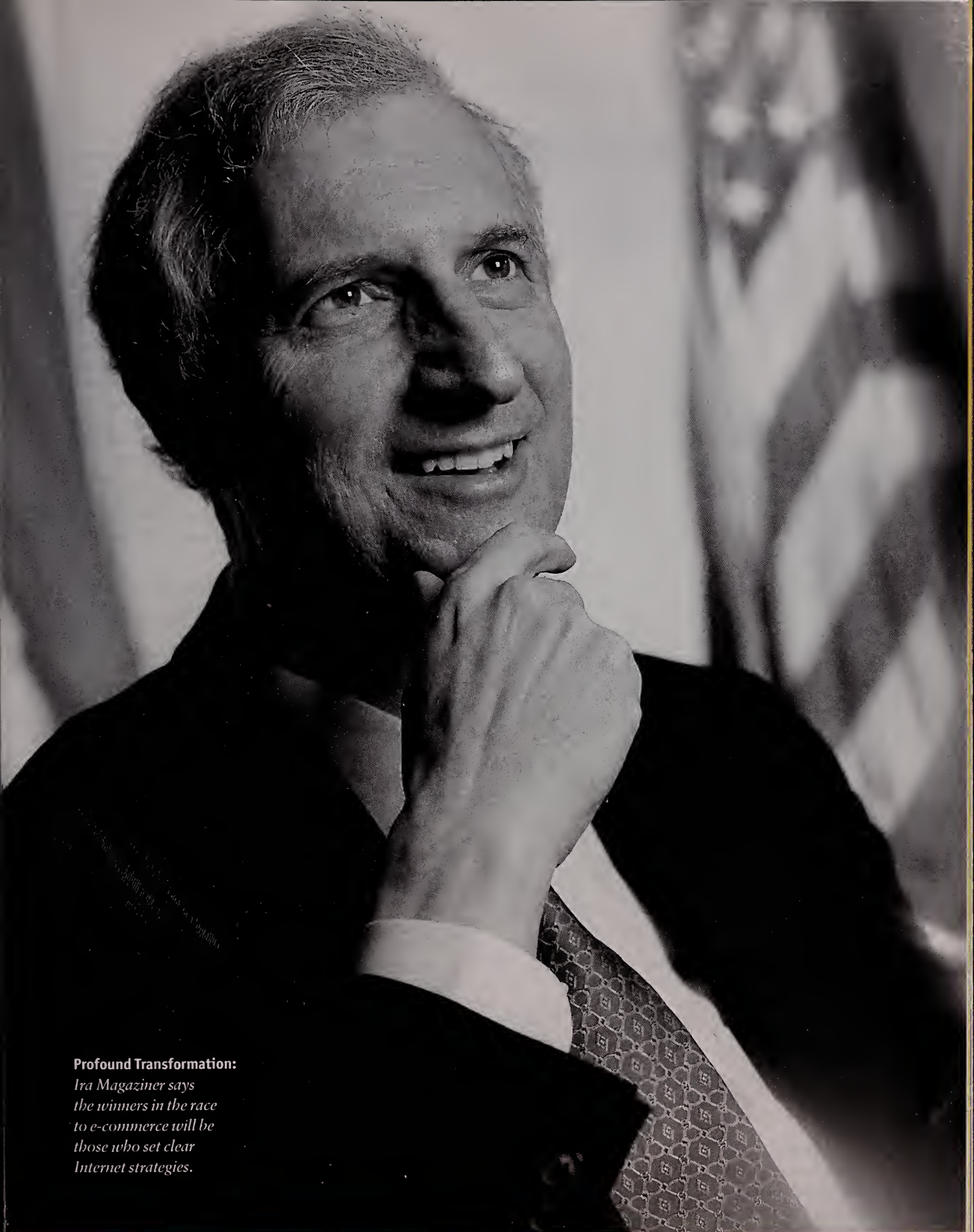
Ira C. Magaziner explains the Clinton administration's hands-off approach.

BY ANNE STUART

Ira C. Magaziner's political career

has been a slalom course through the Himalayas. On the downslope: Magaziner's role as architect of the administration's health-care reform effort, which failed so spectacularly that pundits predicted that Magaziner would fade from Washington faster than a winter sunset over the Potomac. (Indeed, the health-care debacle continues to haunt Magaziner: Last December, a U.S. District Court judge slapped the Clinton administration with almost \$300,000 in sanctions for a 1993 Magaziner affidavit that the judge ruled was a deliberate attempt to conceal who had actually participated on the health-care reform task force.)

At the same time, Magaziner has reached new heights of political and public respect as the Clinton administration's point man on the Internet, chiefly for constructing a package of proposed Internet regulations (see "EC Manners," Page 40). Titled "A Framework for Global Electronic Commerce,"



Profound Transformation:

*Ira Magaziner says
the winners in the race
to e-commerce will be
those who set clear
Internet strategies.*

the document was both streamlined (just 30 pages, compared with the 1,000-page health-care plan) and sweeping, touching on everything from censorship to taxation. Yet the underlying hands-off, market-driven approach is summed up in the opening words of the first of its five principles: "The private sector should lead."

That laissez-faire approach, an abrupt about-face from earlier administration attempts to control the Internet, won acclaim not only from business but also from Internet advocates who were previously among the administration's harshest critics. Magaziner is optimistic that the framework, which evolved through 18 drafts posted on a federal Web site, will be implemented on schedule by Jan. 1, 2000. And earlier this year, one of the first steps was made: The Department of Commerce's National Telecommunications & Information Administration (NTIA) released a draft proposal (available at www.ntia.doc.gov) calling for the oversight of certain critical Internet functions, such as the domain-name system and Internet Protocol number management, while paving the way for increased competition to foster the growth of the Internet for commercial use.

Magaziner, a Rhode Island native and graduate of Brown University, met Clinton when both were Rhodes Scholars at Oxford University in the 1960s. Before joining Clinton's administration, he was a corporate strategist and consultant. Today, Magaziner travels tirelessly worldwide, speaking to groups and meeting with government officials and business leaders to explain and promote the administration's plans for Internet commerce. He spoke with CIO Managing Editor Anne Stuart from his corner office in the Old Executive Office Building, just around the corner from the White House.

CIO: Let's start out with the big picture: how the administration views the Internet's role in U.S. and world economies.

MAGAZINER: We believe that Internet commerce is going to profoundly change our economy for the better, that it may well have the same impact that the Industrial Revolution

had a couple of centuries ago: to improve productivity across all sectors of the economy as well as to provide significant economic growth in many sectors. So we believe that laying the proper foundation for electronic commerce to flourish globally is one of our most important economic tasks.

To that end, you developed "A Framework for Global Electronic Commerce" with the basic message that business, not government, must take the initiative to promote and police commerce on the Internet.

As we talked to companies in this area, [we found] they had two concerns. The first was the lack of a predictable global legal environment for conducting business electronically. The second

"Companies that have the potential to be involved in building out the Internet should look to pursue the opportunity very aggressively. They are going to need to move quickly and flexibly, and they're going to need to take some risks."

concern was that governments were going to come in and overregulate, overtax, overcensor the Internet. There were signs that this was already beginning to happen, including from our own government, and that these actions would strangle the growth of Internet commerce.

So that led us to create "A Framework for Global Electronic Commerce." It calls for the setting of predictable rules globally in areas like contract formation and intellectual property protection. But primarily, it calls for governments to step back and to have industry step forward to set codes of conduct and self-regulate in areas that require some collective action.

Domestically, reaction to that approach was generally positive. What's been the international response?

We're getting far more support internationally than we had initially hoped.

We recently negotiated an Agreement of Principles with the European Union, for example, in which they've backed our call for making the Internet a tariff-free zone, free of customs duties. They've backed our call that no discriminatory taxes be levied against the Internet and that industry self-regulation should be the rule rather than government regulation. We've recently been negotiating with the Japanese and we're optimistic that they're also going to back the general approach and that we'll reach an agreement soon.

You developed this plan very publicly, going through something like 18 drafts online.

Although some people at the White House were skeptical in the beginning

about doing this, it turned out to be very successful because we heard from hundreds and hundreds of people we never would have heard from in Washington. And 50 or 60 suggestions worked their way into the final report that came from that process that were very good suggestions, things that we wouldn't have heard of otherwise.

For example?

In the first drafts, we focused on questions of international taxation, but what a lot of people were really concerned about was that state and local governments were beginning to pass taxes that were inconsistent with each other, and that meant you'd have to hire an army of accountants to know what your tax liability was in every state. By the final draft, we had strong language about the need to develop a uniform and tax-neutral approach at the state and local government levels.

[Many people also commented] that we needed to take special care with respect to the privacy of children. We put greater emphasis on [children's privacy] in later drafts.

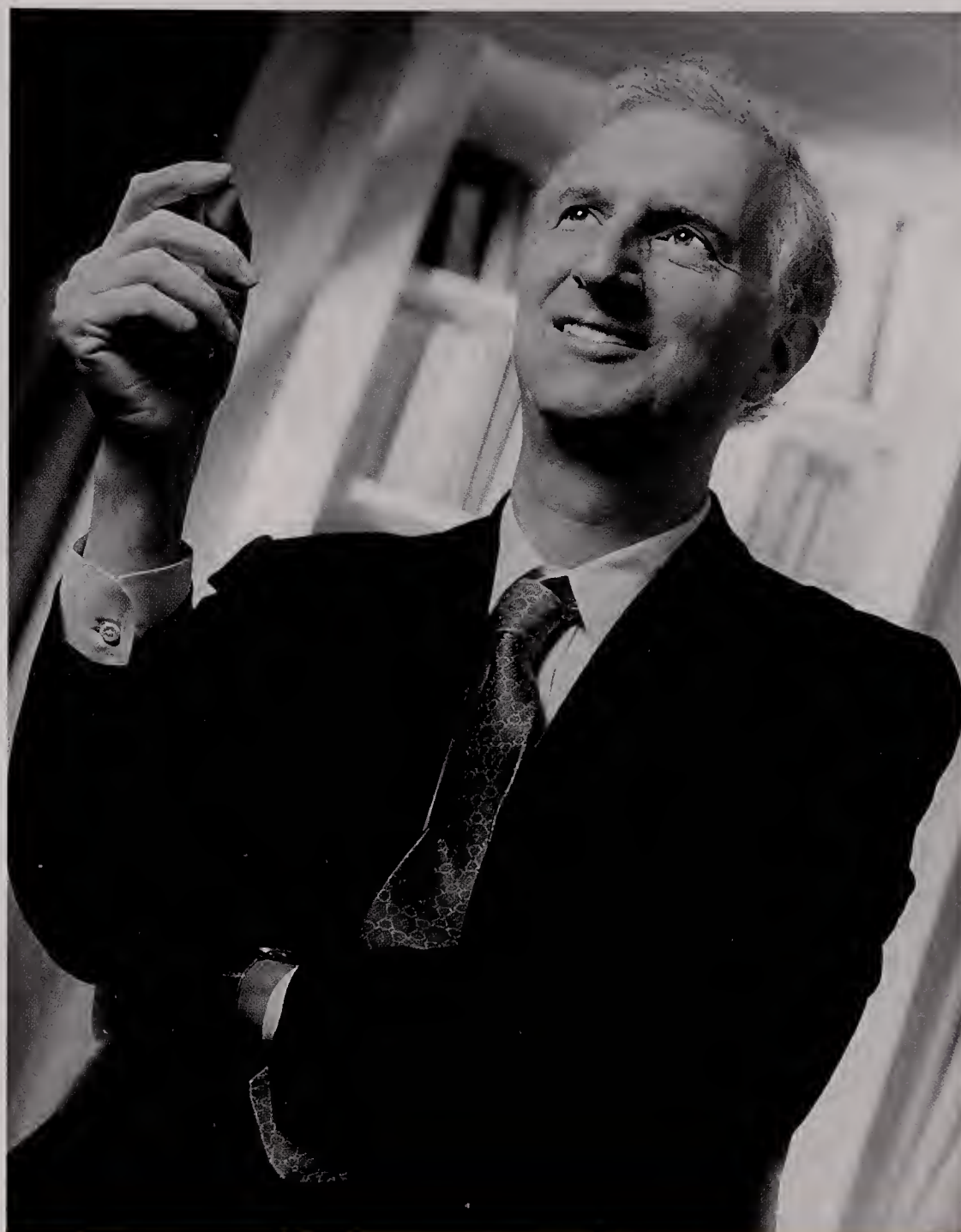
What, specifically, should businesses be doing to lead the charge to electronic commerce?

Electronic commerce is, in all likelihood, going to transform their industries in many fundamental ways. The exact effect will differ from industry to industry, but it will be profound. Companies need to study this and to form strategies about how they're going to move into the digital age. In some companies, it may mean developing ways to sell on the Internet. In other companies, it may mean developing ways to manage their costs, their purchasing, their production planning or whatever on the Internet. For still others, it may mean reorganizing their work processes to take advantage of the new technologies. But [in every case], it's going to be something significant. And the companies that don't do this are going to find that their competitors do and that they're going to be at a competitive disadvantage.

Companies that have the potential to be involved in building out the Internet should look to pursue the opportunity very aggressively. They are going to need to move quickly and flexibly, and they're going to need to take some risks. Within every industry, we're finding leaders who are really embracing [the Internet] and who are almost invariably successful in terms of getting either significant productivity improvements or significant growth businesses from it.

What are these industry leaders doing that's successful?

It depends upon which industry they're in. Success primarily involves getting productivity improvements through management of the supply chain or reorganization of work processes or selling online and getting significant cost reductions and better customer satisfaction. What's happening is that companies are buying online



Ira C. Magaziner

Title: Senior advisor to the president for policy development

Primary Responsibilities: Overseeing development of Clinton administration's electronic commerce recommendations; also chair of joint National Economic Council/National Security Council initiative to increase U.S. exports

Previous Jobs: Founded two international corporate strategy consulting firms, SJS Inc. and Telesis; managed U.S. strategy practice for Towers Perrin Inc.; served as corporate strategist for The Boston Consulting Group Inc. in Boston, London and Tokyo

and beginning to set up business-to-business transactions.

So this is where you see the most dramatic commerce activity rather than in online sales to consumers?

The actual building out of the Internet and the business-to-business commerce is real today, and it's big. The investments are already taking place that are going to accelerate it over the next few years. The con-

EC Manners

Following are the five primary principles of "A Framework for Global Electronic Commerce":

1 The private sector should lead the development of commerce on the Internet.

2 Governments should avoid undue restrictions on electronic commerce.

3 Where government intervention is necessary to facilitate electronic commerce, its goals should be to ensure competition, protect intellectual property and privacy, prevent fraud, foster transparency, support commercial transactions and facilitate dispute resolution.

4 Governments should recognize the medium's unique qualities, not assuming, for example, that regulatory frameworks for telecommunications can be adapted for the Internet.

5 Electronic commerce should be facilitated on a global basis.

The full document can be viewed online at www.iitf.nist.gov/eleccomm/ecom.htm. (For more on the U.S. government's electronic commerce policy, visit www.ecommerce.gov.)

sumer side of it—consumer buying of physical goods that get delivered physically, digital delivery of service, direct marketing advertising—that is still very much in its infancy. But we think the growth potential is huge. As people become more comfortable making payments across the Net, as electronic payment systems develop more effectively, as people become more familiar, as the Web sites become more user friendly, as children teach their parents how to use it, it's going to accelerate dramatically.

What do you recommend that companies consider in developing Internet business strategies?

I would suggest that companies try to break down their work processes and try to see where this new technology can give them productivity [gains or] cut costs, can allow them to do their jobs more efficiently. I would go through each element in my cost structure, from purchasing to the sales function. Because a lot of what's happened in American industry, even in

they're going to be going global, and they've got to start looking that way right away.

What steps are you recommending to protect consumer privacy?

We don't think people will feel comfortable doing business on the Internet unless they feel that their pri-

"We're encouraging industry organizations to develop codes of conduct that may be backed up by seals that can be displayed, based upon the principles of notice and consent."

manufacturing, is that we've done a good job of automating direct labor. Most of the costs now are in overhead of various sorts where the Internet can play a significant role in improving productivity. [This includes] everything from responding to customers wanting to know where their order is to coordinating the supply of materials that you get in your manufacturing process with the production planning and scheduling and customer ordering functions. And now you can provide a seamless system, where your customer can literally look back into the supplier to see when components are becoming available and where they are, and so on.

Secondly, I would look to see how I can provide greater interaction with my customers, so that they can automatically place orders and schedule the delivery of those orders. They can have greater choice in the variety and pick out exactly what they want. They can configure systems themselves. They can use my sales catalogs better to identify exactly what they want. They can try things out virtually on the Internet.

[Finally,] you have to look globally from Day One. The idea that we'll start in the United States and then we'll go global isn't going to work in this era. Even industries that have typically not thought of themselves as global—like retailers, or in many cases wholesalers, or the real estate industry or the insurance industry—

vacy is being protected. So we're encouraging industry organizations to develop codes of conduct that may be backed up by seals that can be displayed, based upon the principles of notice and consent [about how businesses will use personal information collected online]. Web sites will know that they are going to need to have one or another of these seals because otherwise American consumers are going to be wary of doing business with them. We think that kind of use of a market mechanism to stimulate privacy protection will actually be more effective in the digital age than heavy-handed government regulation.

And yet, at the same time, you must be concerned about marketers' legitimate business reasons to learn as much as they can about potential customers.

The free flow of information is important, and marketers are creative people. [They should] go to consumers and say, "We want to use this data for these purposes and we will notify you of opportunities that you might be interested in. If we know what you're interested in, we can help bring it to you. If you like certain kinds of books, we can notify booksellers so that you'll start getting notices from booksellers all over the world when they have a new book like that." Certain consumers will say, "That would be great. That's tailoring something to me."

We're not in any way trying to dampen the direct marketing industry. We're just saying, develop some codes.

What's happening internationally?

In Europe they started down the road of taking a more governmental approach, which we're not sure will work as well. The Japanese, I think, are beginning to take approaches that are similar to ours. Ultimately what we would like, and we're going to try to encourage this in the coming year, is for industry groups from around the world to come together to form common symbols. Much as we have certain symbols that are international for vehicle traffic, [such as] stop signs, it would be nice if there were common symbols used by Web sites around the world for consumers that could say, "Yes, these privacy principles are being upheld by anybody displaying these seals."

How about security? Will consumers ever feel completely secure about the Internet?

I'm not sure one can ever feel completely secure about it. But I think we can strive to make transactions and communications on the Internet at least as secure as they are in the rest of our lives.

The most controversial area, of course, has been the question of encryption.

The security of the data flow itself can be enhanced significantly by the use of high-level encryption. The difficulty that we've been trying to wrestle with is that the use of high-level encryption can also make it easier for international terrorists and drug dealers and so on to do business [on the Internet]. So we've been trying to develop a balanced approach. We have freed up transactions to use any type of encryption. If I'm making a

financial transaction or an electronic commerce transaction of any sort, I can use unlimited encryption of any sort. That can be fully secure.

Where the debate is still taking place has to do with communication. If I'm communicating with you, should there be some kind of key-recovery system whereby law enforcement can get access to the key to decrypt that communication in those rare circumstances where they can prove that a criminal activity is taking place? Or should they not have that access? I hope we'll get it resolved in the next couple of months.

Looking ahead to global expansion, what happens if not everyone is on board at the same level?

One of the first things I did when the president asked me to take this assignment was to read some histories of the Industrial Revolution. If you look at the world economic leaders before the Industrial Revolution, there were some who embraced the changes. And there were fundamental changes in legal, commercial and economic paradigms that they went through. There were others who resisted that and tried to hold on to their old ways of doing things. And inevitably, the ones who embraced the change succeeded; the ones who didn't failed and fell backward.

There were also some emerging, poorer countries that embraced the changes and came into the ranks of world economic leaders.

I think we're in a similar period right now. And what we have said to other countries is that we're not interested in viewing these global electronic commerce negotiations as typical trade negotiations, where we hammer you to open your market, you hammer us to do [something else]. Rather, with the countries that want to embrace this future, we want to work together as equals to architect the best environment for that future to emerge into. For those that don't want to, that want to fight it, that's their problem. And so there will be some uneven development. But what we're trying to do is offer the opportunity to countries that want to work with us.

When the lower-orbit satellites go up in the early part of the next decade, there's going to be an opportunity to build out the Internet in remote areas of the globe far more cheaply than you

could build out the telephone system. And right now, as you may know, more than half the people on earth don't have a telephone. But when the satellites are up, you'll be able to go to remote villages in Africa and so on and build a local area network and the right kind of transmitter, and be up through the satellite and have broadband [communications] going both ways. And that means you'll be able to bring educational resources, you'll be able to bring medical diagnostics, you'll be able to bring the world's information flow to poor areas of the globe. There's a tremendous opportunity to bring greater global integration and to narrow the gap between rich and poor. 

"Within every industry, we're finding leaders who are really embracing the Internet, and who are almost invariably successful in terms of getting either significant productivity improvements or significant growth businesses from it."

Finding It Online

To hear Magaziner and to read an expanded version of this interview, please visit www.cio.com/updates.

Managing Editor Anne Stuart can be reached at astuart@cio.com.



Reading Between The Lines

Market studies of Web commerce may tell only half the story. But which half? Four business school professors suggest a few ways to find out.

BY SARI KALIN



TWO YEARS AGO, DURING THE EARLY DAYS OF THE WEB'S COMMERCIAL colonization, Dell Computer Corp. was struggling to answer a question: Are people ready to buy its computers over the Web? Soothsayers claimed that the Web would flourish and that Web business would soon be big business. But how big? Market researchers' predictions for Web sales by 2001 ranged from a few billion to more than \$100 billion. What could Dell cull from those reports to help it set its Web commerce course?

"The only thing we knew was that none of them was right," says Scot Eckert, director of Dell Online, recalling his reaction to the all-over-the-map market projections. "But they all had a positive trend."

That positive trend and positive customer feedback were enough for Dell to make a small leap of faith, Eckert says. The Round Rock, Texas-based firm put roughly 10 people to work building a Web store that launched in July 1996. Dell Online now does more than \$4 million in business a day—far more than anyone predicted. A Web commerce success story, to be sure. Yet the first chapter of that story

Reader ROI

IN THIS STORY, READERS WILL learn

- ▶ How to decide which market study best meets their needs
- ▶ How to judge the validity of a survey
- ▶ What they need to know before purchasing a high-priced report

Meet the Professors

David W. Stewart

Chairman, Marketing Dept.
Marshall School of Business,
University of Southern
California, Los Angeles

S. Chan Choi

Marketing Dept.
Graduate School of
Management, Rutgers
University, Newark, N.J.

Eric Johnson

Marketing Dept.
The Wharton School,
University of Pennsylvania,
Philadelphia

Sachin Gupta*

Marketing Dept.
Kellogg Graduate School
of Management, North-
western University,
Evanston, Ill.

**Gupta reviewed only the reports from IDC and Forrester.*

Forrester Research Inc.

Cambridge, Mass. www.forrester.com

REPORT:

Sizing Intercompany Commerce

FORRESTER CHECKED OUT 150 COMPANIES' WEB COMMERCE plans to prepare this report, says Blane Erwin, director of Business Trade & Technology Strategies at Forrester. The firm interviewed 63 of the pioneers in depth about their current Web business and their future expectations and then spoke with

scope: Business-to-business Internet-based electronic commerce in the United States from 1997 to 2002.

prediction: Business-to-business Internet-based electronic commerce in the United States will grow from \$8 billion in 1997 to \$327 billion in 2002.

price: Reports are available only to Forrester subscribers; base subscriber fee is \$34,500, which includes membership to 3 of Forrester's 12 services.

another 25 Internet commerce vendors. The interviews were with CIOs' executive peers, Erwin says, such as directors of marketing, sales, customer service and purchasing. The report breaks down its findings by sector—manufacturing durable, manufacturing non-durable, wholesale and business retail, utilities, transportation and services—and then

compares its projections to the U.S. Dept. of Commerce projections for the growth of those sectors overall. Among other things, it predicts that Web commerce uptake will be faster in industries that use the Web to replace phone and fax ordering, not as a substitute for entrenched EDI systems. And even in 2002, Web commerce will represent only 2.3 percent of total U.S. business-to-business trade.

Forrester's report won praise from Stewart as a "descriptive study" of 63 Web commerce pioneers' strategies, one that identifies several interesting trends that other types of studies might miss. Even so, Stewart and some other reviewers questioned Forrester's small sample size and its decision to focus on U.S. companies already neck-deep in the Internet.

The next version of the report due in mid-1998 will have data from outside the United States, Erwin says. He acknowledges that academic researchers would be more interested in a study that included people who were not yet committed to Web commerce because that would tell more about Web commerce penetration. But, he says, Forrester's corporate clients don't want to hear about Web wimps. Rather, says Erwin, "they want to know the experience of people who are doing it."

Report Card

David Stewart: B for method, B+ for usefulness to a typical reader.

S. Chan Choi: B or low-range B if submitted for a market research class; B if submitted for a marketing management class.

Sachin Gupta: C overall

Eric Johnson: B- overall

highlights a question that every Web-commerce wannabe faces: How much can I trust the deluge of predictions on how fast Web commerce will grow?

Web business hopefuls can predict one thing with certainty: There will be no shortage of market researchers and strategists who will cook up estimates of Web commerce and who will hope to receive thousands of dollars for their insights. Cambridge, Mass.-based Forrester Research Inc., for example, predicts business-to-business commerce in the United States will rise to \$327 billion by 2002, a revelation that Forrester shares with subscribers to its Business Trade & Technology Strategies service. But how does Forrester's figure square with one from Framingham, Mass.-based International Data Corp., a CIO Communications Inc. sister company, that puts U.S. business-to-business commerce for that year at around \$214 billion?

Neither of these insights comes cheap. IDC's Global Market Forecast for Internet Usage and Commerce has a

"So much of the market information that is purchased is not used well if at all."

—David Stewart

price tag of \$3,500. Forrester shares its reports only with subscribers who have ponied up at least the base subscription price of \$34,500; for that sum, a subscriber gets access to 3 of Forrester's 12 services. And the plethora of reports leaves unanswered the \$64,000 question: Who is right? More practically, how can businesses that rely on the Web make the most of these prophecies?

To answer these questions, *CIO Web Business* asked four business school professors to review three studies, one each from Forrester, IDC and New York City-based Jupiter Communications LLC. We asked the academics to grade the studies based on methodology and how well they communicate it as well as on the studies' managerial usefulness (see "Sizing Intercompany Commerce," this page, "Global Market Forecast for Internet Usage and Commerce," Page 46 and "1998 Online Shopping Report," Page 48).

The business school professors, as well as a few cyberspace professionals we interviewed, agreed on one thing: No single big-picture report can offer the focused prophecy that will fit every Web business.

"What one wants to take away from these studies is the broad trends rather than the absolute numbers," says Sachin Gupta, assistant professor of marketing at Northwestern University's Kellogg Graduate School of Management in Evanston, Ill.

Gupta and other reviewers advise people to look at several reports together, even though they may seem to cover the same ground. Reviewers also sug-

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International Data Corp.

Framingham, Mass. www.idgresearch.com

REPORT:

Global Market Forecast for Internet Usage and Commerce

TO FORECAST HOW THE INTERNET COMMERCE MARKET WILL GROW, IDC has developed the Internet Commerce Market Model. The company feeds the results from 40,000 user surveys a year into the model and it balances the users' estimates with data from vendors, explains John Gantz, a senior vice president at IDC. The model uses vendor data on how many PCs, NCs and Internet access devices have already been sold—and how many are expected to be sold in the next few years—to help predict how many people will access the Internet. The

scope: Business and consumer Internet-based electronic commerce usage and spending worldwide from 1995 to 2002.

prediction: Worldwide Internet-based electronic commerce will grow from \$296 million in 1995 to nearly \$426 billion in 2002; in the United States in 2002, Net-based electronic commerce will grow to \$54 billion from homes and \$214 billion from business employees.

price: \$3,500

IDC believes that vendors currently are not pitching their Internet wares that way.

Reviewers gave the IDC study high marks for its global scope and its methodology because it spells out all assumptions underlying the data it feeds into its model; the model also lets IDC test different assumptions on a clients' request and see how they change the projection of the market's growth. Rutgers' Choi cautions, however, that each of the many parameters that feed into the model "might have certain errors, and if you add up many of these errors they can accumulate to quite a large error later." Choi also noted that for some countries where IDC does not have primary research data, IDC assumes the market will behave like that in the United States or Western Europe; those assumptions may not be valid.

Gantz agrees that Choi has a point. Yet he notes that just as errors can compound, they can also cancel each other out. And the number of countries for which IDC did not have data and substituted assumptions amounts to less than 10 percent of the market, he says; IDC is starting to get information on more of these countries and to add it to its forecasts.

report presents the Internet usage and commerce results by region and by market (home, small business, medium to large business, government and education). IDC updates the model quarterly.

IDC's primary audience for the report includes computer hardware and software vendors, Internet service providers, RBOCs, and the like. The report does not give stories of trailblazing users (other IDC reports do); it is also not segmented vertically (although it will be in the future), because

Report Card

David Stewart: A for methodology, B+ for usefulness to a typical reader.

S. Chan Choi: A for a marketing research class, B for a marketing management class.

Sachin Gupta: B overall

Eric Johnson: B- overall

gest that new cybercompanies (or cyberoffshoots of established companies) conduct their own targeted research to supplement the off-the-shelf reports. But our experts warn blending data, experience and intuition is not as simple as it sounds. "Even large companies do not do this well," says David W. Stewart, chairman of the marketing department at the University of Southern California's Marshall School of Business in Los Angeles. "So much of the market information that is purchased is not used well if at all."

A common complaint that we heard from reviewers is that the studies often skimp on revealing methodological details, such as precisely who was interviewed, what questions were asked and when they were asked. That lack of information does not mean the data is invalid, Stewart says; but it does make it hard to know if it is valid or not. Stewart says that as a user he would request those details, and he recommends that others do, too.

FOR COMPANIES HOPING TO GET THE GREATEST benefit from market research studies, our professors offer these suggestions:

- Pay attention to the report's scope and think about how your business fits within it. Does the study examine only business-to-business commerce when your Web business may have both a business and consumer audience? Is it a United States-only look that may miss trends overseas? Has the study broken down its results by vertical markets to give you enough detail on your business segment? And even if the report matches your business's scope—apples to apples—does it count apple blossoms when you are more interested in applesauce? IDC and Forrester, for example, count a "sale" as an order that is entered over the Web; that order does not need to be paid for via the Web. Jupiter's report counts only orders that are paid for online.

- Understand what the researcher did and how it could affect the results. Forrester, by interviewing early adopters already committed to doing business on the Web, presents interesting war stories and strategies from the field. But early adopters' behavior can also be quite different from the average company's behavior, Gupta says. IDC, on the other hand, interviewed 40,000 people about their online spending habits to develop its predictions. While the number is impressive, Stewart says, purchasers generally underestimate long-term demand.

- Look carefully at a researcher's assumptions. All of the studies measure the present—how many people or corporations have access to the Web, how many transactions are taking place today. They then make predictions based on a set of assumptions that are in turn based

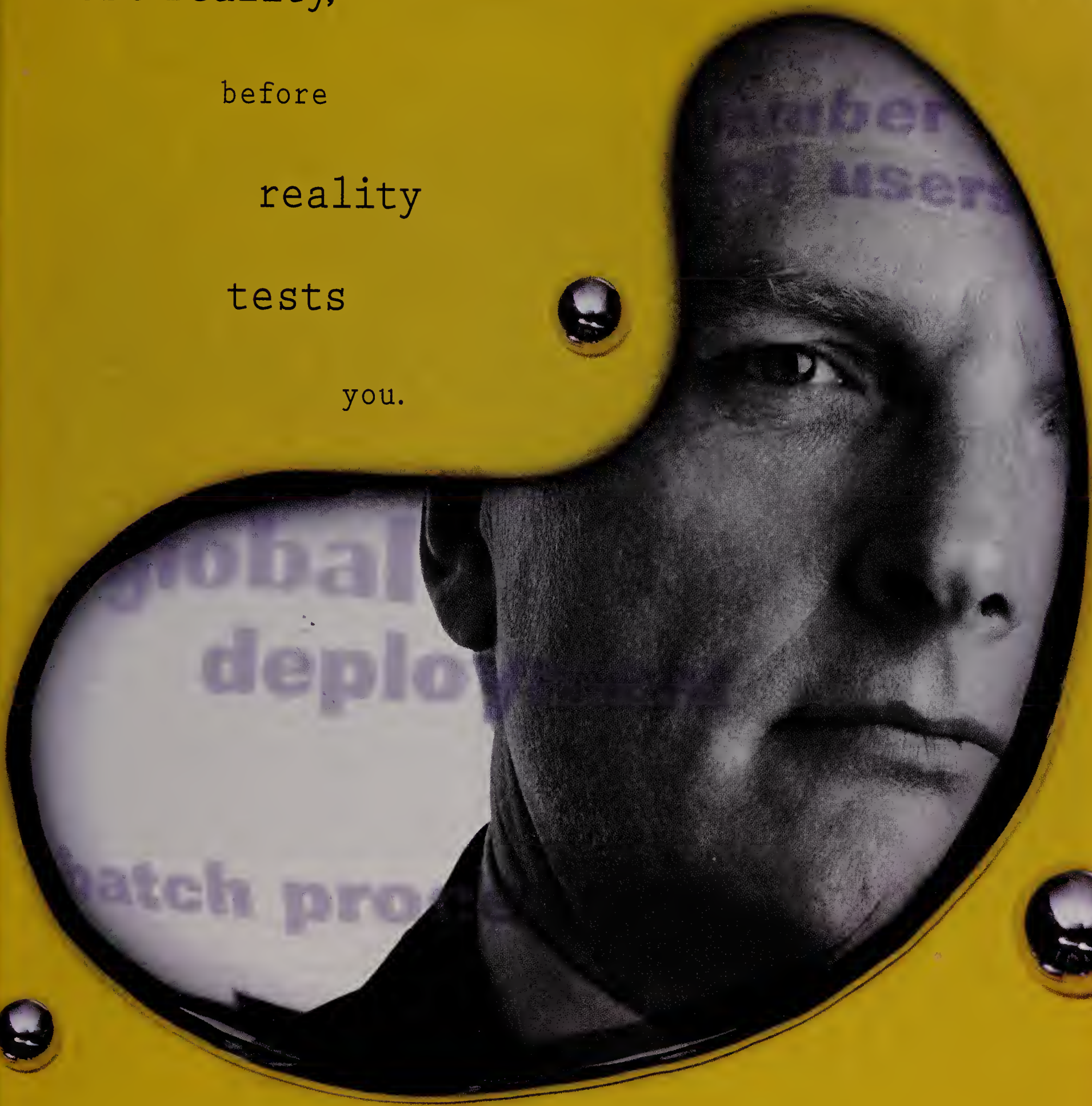
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MERCURY INTERACTIVE

Jupiter Communications LLC
New York City www.jup.com

REPORT: 1998 Online Shopping Report

THIS REPORT OFFERS DEMOGRAPHIC INFORMATION ABOUT ONLINE shoppers as well as projections for what percentage of payments will be made with various online payment methods. It gives a detailed breakdown of online shopping revenues and projections by type of product—music, specialty gifts, tickets, clothing, books, software, groceries, PC hardware and consumer electronics, and travel—and as a percentage of total revenues for each product type. The report also provides business strategy thumbnails on 21 online merchants (including online only, traditional retailers, direct sellers, merchant-

scope: Consumer online shopping in the United States from 1996 through 2002.

prediction: Consumer online shopping will grow from \$2.6 billion in 1997 to \$37.5 billion in 2002, not including cars and real estate.

price: \$1,895

and "proprietary in-house research and databases." Stewart says the last statement makes him nervous "because the local palm reader will also tell you that the methodology is proprietary." That aside, Stewart and Choi thought the report did an excellent job of explaining the specific managerial implications of its findings. By giving a picture of what is now being sold online, Stewart says, the report may be less useful for someone in a different business who wants to know what might be sold successfully online in the future. But that narrower scope helps Jupiter give more specific conclusions, he says. And the detailed descriptions of current users will also be useful to Web commerce novices.

Jupiter views its reports as standalone products but is open to answering deeper questions about the methodology only for report purchasers', Vanderbilt says. As for the scope, Vanderbilt notes that the report looks at what criteria make a product a success (or a bust) online; readers can learn lessons from that and apply them to other product segments. Says Vanderbilt: "The numbers are just one piece of a much larger pie of what we have to offer our clients in terms of understanding emerging markets."

disers and catalog houses) and 8 online malls. To inform its online research, it also looked at consumer behavior in traditional channels, says Nicole Vanderbilt, Jupiter's group director of digital commerce.

One reviewer criticized Jupiter for not revealing more methodological details right in the report, which states that it is based on interviews with industry leaders, Web research

Report Card

David Stewart: D for methodology because the report failed to explain it in sufficient depth; A for the usefulness to the typical reader.

S. Chan Choi: B+ for a marketing research class, assuming the validity of unsupplied proprietary primary research; A for a marketing management class.

Eric Johnson: B- overall

Sachin Gupta: Did not review.

on the researcher's belief, Gupta says. Has the report spelled out all assumptions? And do those assumptions stand up to scrutiny based on your experience?

■ Ask not which report is right; ask what they can tell you about the market's uncertainty or about your own tolerance for risk. The reports tend to speak in rock-solid terms and "ignore the fact that no one really knows what is going to happen," says Eric Johnson, the David Hauck professor of marketing at the University of Pennsylvania's The Wharton School in Philadelphia. Johnson says savvy Web businesses don't ignore uncertainty—they plan for it. His advice? Think about scalability when you're buying hardware. Learn from your Web commerce successes and failures. Keep reassessing the level of uncertainty, and shift your strategy accordingly.

Forecasts are most valuable when they discuss areas in which customers' Web behavior is already well established.

"Such uncertainty won't sell consulting services," Johnson says. "However, it is a fact of life." Stewart notes that your reaction to multibillion-dollar differences in projections can tell you a lot about your tolerance for risk. If you would plunge ahead with your business plan no matter which report was right, great; if not, make sure that you manage that risk.

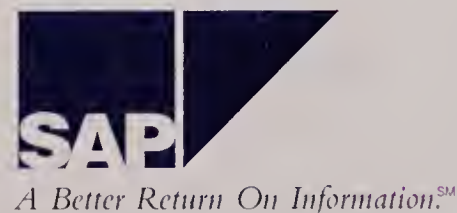
Forecasts are generally most valuable when they discuss areas in which customers' Web behavior is already well established and has a direct impact on the business, such as Web sales of computer hardware and software, says John Sviokla, an associate professor and Baxter Fellow in Information Technology at Harvard Business School in Cambridge, Mass. One common problem, Sviokla says, is that most businesses don't understand their customers' microbehavior on the Web. And they may not have sorted out whether they want to use the Web for direct sales or for indirect activities that support sales, such as improved customer service. If your business falls in the don't understand/indirect benefit quadrant, test the Web waters, Sviokla advises. "You need the basic [Web] demographics," he says. "But beyond that the predictions are less valuable than actual experimentation." **CIO**

Senior Writer Sari Kalin can be reached at skalin@cio.com.

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Facts of Life

Web activists say information wants to be free. Federal law says much of it already is. For online database publishers, that means hard work doesn't always pay.

BY WAYNE D. BENNETT

MORE THAN A FEW WEB PUBLISHERS HAVE NOTICED that the Web is the perfect place to post a database. For starters, data on the Web can be changed nearly as fast as it changes in the real world. But for a business whose carefully crafted product is a database, the Web has a couple of trouble spots. One is the ease—a mouse click to be precise—with which a user can copy and republish the data that you have labored to collect. Another is the lack of legal recourse for Web publishers whose data is copied. As we speak, indignant legislators all over the world are trying to change that. But they have tried before and failed.

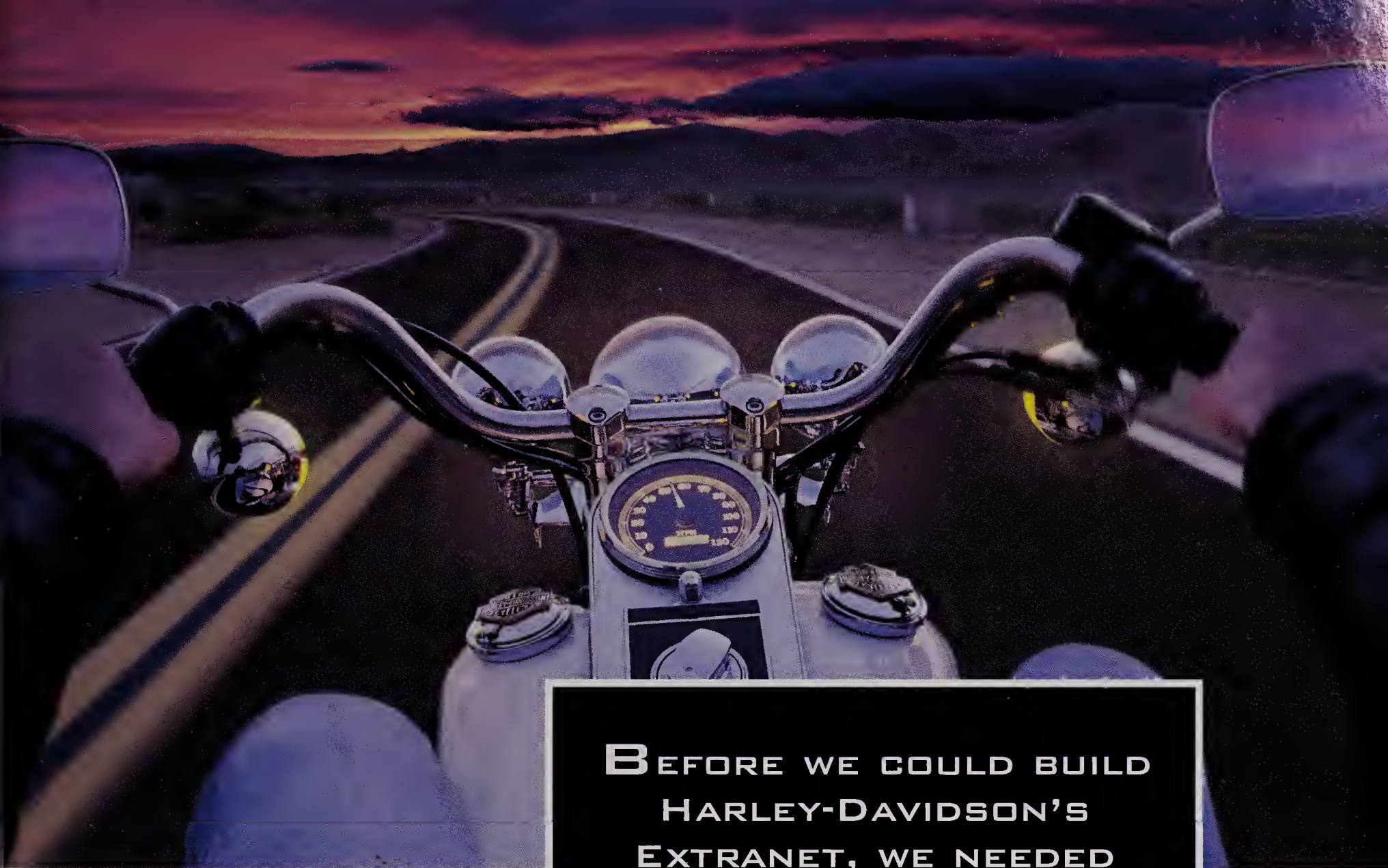
What's all the fuss about? An information provider, say Dow Jones & Company Inc., or perhaps yourself, goes to great expense to collect, organize and disseminate current financial information to willing customers. Like most information these days, this is published on a Web site that has a click-wrap license prohibiting republication by the customer. It sounds like a software license, right? It isn't. Software is copyrighted. But in the case of many databases, the information in the database is not copyrightable. That's because it is just a bunch of facts (for example, Microsoft stock is up one point this morning), and no one can own facts.

Where a database is solely a compilation of facts, as in the case of stock ticker information, the compilation as a whole can sometimes be copyrighted but only if the compiler exercises some modicum of creativity in the selection or arrangement of the facts. A database, for example, of the 100 Most Company-Friendly Venture Capitalists arranged in order of friendliness, would pass the legal test for creativity. But even in those cases, the facts themselves are still uncopyrightable. Users can copy them, republish them or wallpaper their kitchen with them as long as no substantial portion of the creative compilation is copied.

In 1991 when the United States Supreme Court considered *Feist Publications v. Rural Telephone Service Co.*, it rejected the argument that databases ought to have protection under what has become known as the "sweat of the brow" theory: Without regard to creativity, compilations involve enormous investments of time and money and



ILLUSTRATION BY CHRISTOPH HITZ



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therefore ought to have some protection from those clever leeches who would otherwise piggyback on the sweat of the publisher. As it turns out, your mom and dad were right: Hard work must be its own reward; it certainly does not seem to attract even the compulsory rights fees that are due Nancy Sinatra's Greatest Hit.

Lacking any federal protection, many a provider of data has turned to state contract law and decided to license the use of the information. With a license, at least, a provider can specifically preclude republication by the user. But that doesn't always work either. Researchers, librarians, news reporters and others complain that facts should not be restricted even by contract. They recite the Esther Dyson mantra: Information wants to be free. They argue that federal copyright law preempts state contract law in this regard: If no copyright protection is available, no other protection should be available, at least for mass-marketed works.

Some confusion arises because of the difference in the nature of copyright as compared with contract. Contracts establish rights only between the parties to the contract; copyright establishes rights for the author *against the whole world*. The shrink-wrap licenses used by software vendors (which already have copyright protection) are intended to go beyond copyright protection in several important ways. One of the original reasons for licensing software is to avoid the first sale rule, which permits the purchaser of a copy of a copyrighted work to resell the copy. If you buy a copy of a copyrighted work, for example, you buy the latest John Grisham novel at your neighborhood bookstore, you are free to sell it to someone else when you are through with it. On the other hand, if you license the same book, for example, by downloading the text online under a click-wrap license, and if the publisher includes a restriction in the license, you can be prohibited from transferring the text to others. This also applies to a lot of database information: Once you have used it, you are through with it, so if you purchased it (instead of licensing it), you could resell it. Because database publishers do not want this transfer to occur, they license the database to you instead of selling a copy to you.

That's the legal story. The practical

reason for licensing digital information is that regardless of the vendor's rights against the world, vendors want specific rights against you if you decide to share the software, digital book or database with your thousand closest friends over the Internet. In other words, while the dead tree booksellers are secure in the

tected any "substantial investment in the collection, assembly, verification, organization or presentation" of the contents of a compilation. Sounds like protecting sweat, right? Too bad the treaty was withdrawn after being presented.

Here in the United States, legislation was introduced in the 104th Congress

Most of us are too cheap and lazy to copy traditional books onto more dead trees, but digital publishers know their rights can be defiled with the click of a mouse.

knowledge that most of us are too cheap and lazy to invest the time and money required to copy their books onto more dead trees, digital publishers are keenly aware that their rights can be defiled with the click of a mouse.

On the international front, the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS, a major multinational treaty) requires WTO member countries to protect compilations "which by reason of the selection or arrangement of their contents constitute intellectual creations." Publishers find little help there. But more recently the answer proposed in the international community is a new form of protection for databases that while not copyright is akin to copyright. The 1996 European Union (EU) Database Directive contains database copyright protection similar to that in TRIPS but also provides separate protection for the structure of the database and a new *sui generis* right (separate from copyright and named in Latin so that we lawyers can maintain high billing rates), which protects against unauthorized extraction or reutilization of all or any substantial part of a compilation. This begins to get closer to protecting sweat of the brow.

The EU Directive went into effect Jan. 1, 1998. Countries that do not adopt similar protection measures may expect shabby treatment in Europe for their works distributed there. A 1996 draft treaty presented to the World Intellectual Property Organization (WIPO) in Geneva would have pro-

to create a *sui generis* right. It died a lonely death. In the most recent Congress, Rep. Howard Coble (R-N.C.) introduced a different bill to fill the gap left by the Supreme Court. This one (HR 2652) is rooted in unfair competition law, not copyright law. It would impose liability on anyone who extracts or uses in commerce all or any substantial part of a compilation that has been gathered, organized or maintained through substantial investment so as to harm the actual or potential market for any product or service that incorporates the compilation. The protection would not end after a fixed number of years as in the case of copyright. The bill permits extracting or using information from protected compilations in certain circumstances but leaves all databases created by local, state and federal agencies unprotected.

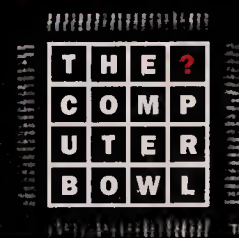
Coble's bill was last seen late last year in the House Judiciary Committee and has attracted a host of critics, who claim that it is premature and ill-conceived. But the handwriting is on the wall. Database publishers are not going to invest in the compilation of facts if their compilations or any significant portion of them can be freely copied. Expect some form of the bill to be reintroduced and passed before long. If Web publishers are to be encouraged to compile useful information, something's gotta give. **CIO**

Wayne D. Bennett is a partner at the Boston law firm of Bingham, Dana LLP. He can be reached at bennettw@bingham.com.

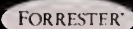
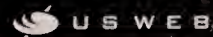
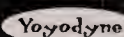
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Multidimensional Marketing

Do Web-based 3-D tools have a place in the marketing department?

BY JIM STERNE

I'VE ALWAYS BEEN A STRONG DETRACTOR WHEN IT COMES TO chat for business purposes. Nobody types fast enough to hold my attention, and what's created on the fly during a mangled, seven-way conversation is hardly worth reading. Chat is fine for 13-year-old boys who want to have adult conversations with 19-year-old girls who turn out to be other 13-year-old boys. But for business, it's a bore.

I felt the same way about using virtual reality for marketing until I wandered around the Fall Internet World conference in New York just before Christmas. Maybe it was the holiday effect, but suddenly there were serious tools such as bubble pictures and zoom-in photos for making 3-D worlds.

Virtual Selling Space

Products like VRCom from ExoVision Technologies Inc. (www.exovision.com) and 3D Webmaster from Superscape (www.superscape.com) are what you might expect from a genetic cross between Walt Disney and Netscape Communications Corp.'s Marc Andreessen. Think Tim Berners-Lee in Toontown: blocky graphics, swirling movement and awkward controls in a reasonably representational environment. I had no trouble recognizing the virtual store or the shelves or the products on display.

In all of the virtual worlds I visited, I could walk around the "city" and find the stores and walk inside them. I could rotate a camera and see what the back of the store looked like. I could look through the viewfinder and click on the components of products to get lists of features and reams of specifications. But drawings are still drawings. I wanted photo-realism. I found it in the next aisle at the eVox Productions (www.evovox.com) booth.

Say Cheese

There was such a crowd at the eVox display that I had to look over the shoulders of the people eyeing the company's efforts. A service company, eVox uses tools like QuickTimeVR, RealVR, Oliver and a host of others to create a 360-degree panoramic view of the inside of cars on the Microsoft Corp. CarPoint site, a virtual tour of the operating rooms at Cedars-Sinai Hospital in Los Angeles and even a CD-ROM that Warner-Brothers uses to describe how licensed characters like Bugs Bunny may and may not be reproduced. You end up with a photograph you can turn around in and view from all sides.

The company also creates images that can be turned and zoomed for closer inspection. Nifty. Now you can get a very close look at that Ferrari you have your eye on. The combination of 360-degree

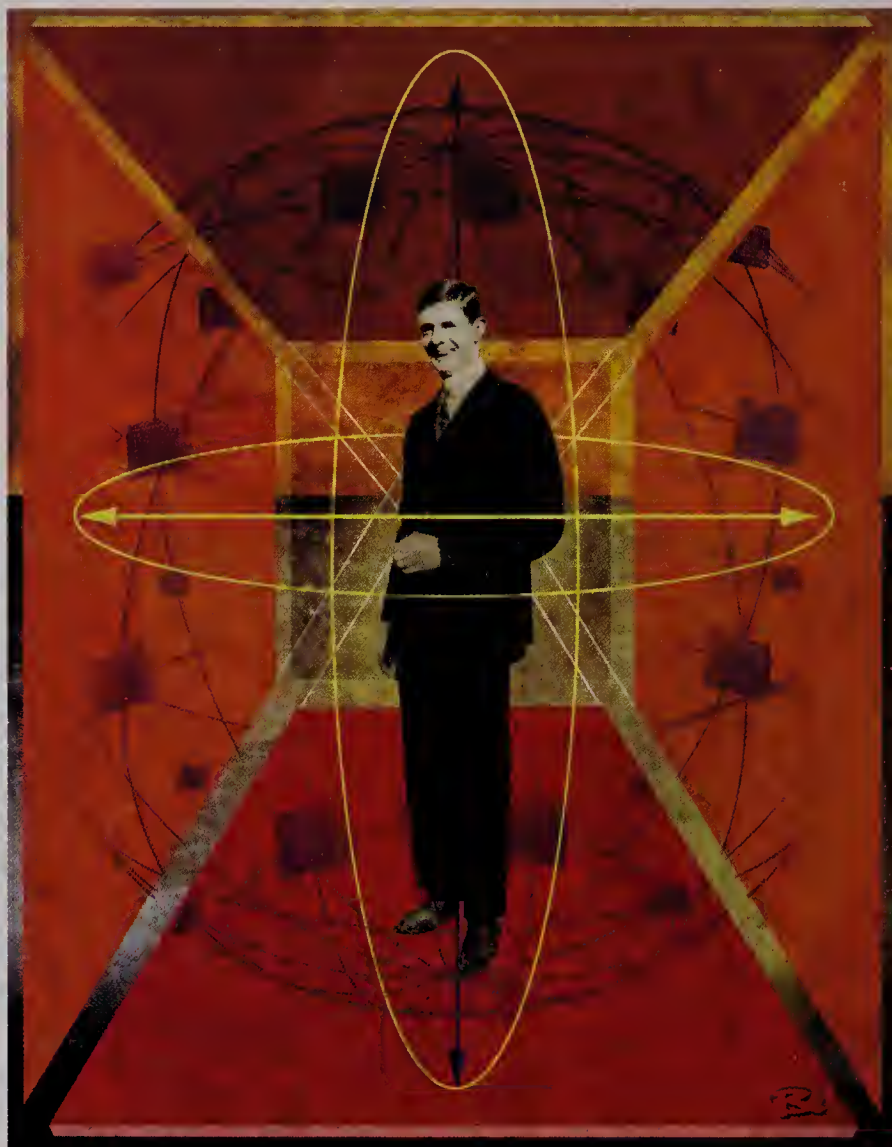
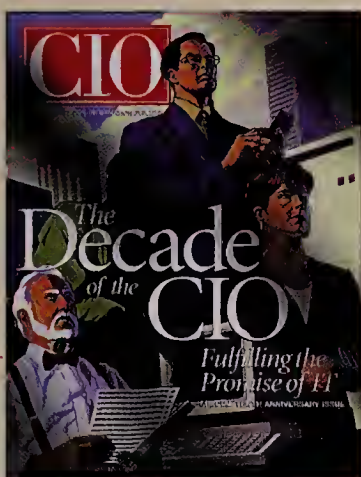


ILLUSTRATION BY JOHN RITTER

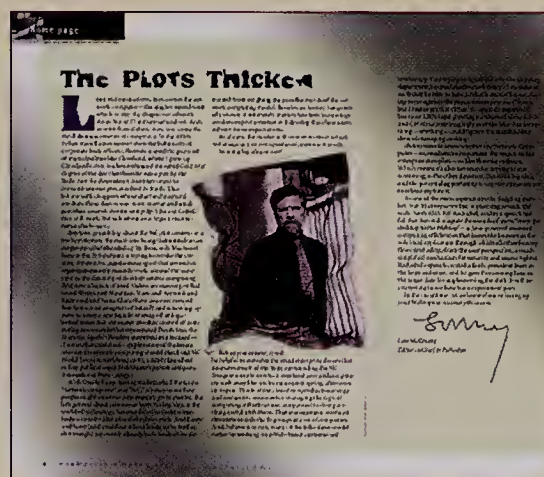
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backgrounds and photographic objects you can fly around is powerful. Even nicer is the library of royalty-free VR images that eVox provides. The technology's possibilities start the little gray cells in a marketer's head working overtime.

But there is one drawback: eVox's

the articles of clothing she was wearing, including pricing and a purchase form. The audience applauded. Me too.

Still, the whole thing seemed sort of empty. It was just me, wandering around in a make-believe world with rendered and photographed images. I was lonely.

The possibilities of 3-D technology start the little gray cells in a marketer's head working overtime.

images are only 2 1/2-D. If you want to show off the fabulous five-story atrium interior of your new hotel, you're stuck. You can't look up unless you wander over to the next booth. I was stopped in my tracks at Interactive Pictures Corp. (www.ipix.com) when I saw the image in the browser go from the horizon to the zenith and down the other side.

It was hard to keep my balance. I wondered how many pictures had been stitched together to make that spherical image. Turns out the answer is two 35mm, fisheye snapshots are used to create a photo-realistic, look-any-which-way-you-want image.

But I still wasn't satisfied. I wanted more. So I went to the keynote speech given by Pepsi dropout and Apple kick-out John Sculley.

Feature Applause

Sculley brought out a demo of several products from his Live Picture Inc. (www.livepicture.com) venture. The demo featured a full-motion video. Sculley stopped the video and zoomed out, revealing an image of the video playing on a TV set in a room. Then Sculley zoomed out again to show that the TV set was in a room of an apartment, and we were looking down the hall into the room with the TV. Once again Sculley zoomed out, showing that the apartment was on the 40th floor of a building in the middle of a city. Then the city was in a frame on an easel in the middle of a desert. He panned left and right.

On the right another TV set showed a video of a fashion show. Sculley clicked on one of the models walking down the runway and up popped information on

And I wasn't really convinced that VR could be an effective marketing tool until I went to a milk factory in Iceland.

The Emerald City Was Never Like This

The only people who would establish an office in a refrigerator in an old milk-processing plant in Reykjavik are the kind of people who see things from a different angle. The people at OZ Interactive Inc. (www.oz.com) see things from different angles for a living. They make Web-based, 3-D, interactive, multiperson, chat-world software.

With multiuser capabilities and point-to-point audio communication, OZ Virtual allows your cartoon to do the talking and the walking. OZ Virtual is a 3-D interactive home where droids and avatars—the virtual representations of humans—play.

You can create your own avatar and not only type your thoughts through it but imbue it with an array of gestures. You can nod, shake your head, jump for joy or play air guitar if you think that will help you get your point across.

And how can this be of interest to marketers?

A farmer wants to see a head-on, 3-D rendering of the \$100,000 combine he's thinking of buying. He wants to point to the engine compartment and have the door lift away, exposing the workings inside. He wants to see what it's going to take to switch from a 30-inch row cutter to a 23-inch row cutter. We could do all that with products on display at Internet World, but the farmer may also want to chat with some of the other farmers who are taking a look at it and get their opinions.

Your product is not as complicated as all that? The Swedish telecommunications company Ericsson (www.ericsson.com) has decided on the OZ solution for a virtual private trade show.

Ericsson Goes Mobile

The Ericsson World (duvel.ericsson.se) is more than a place to shop. It's a multi-chambered world with different types of products in each room. Wander in and point to a specific mobile phone, and set in motion a multimedia extravaganza describing your voice communication device of choice. Confused? Lost? No problem, just call on the "angel" hovering nearby. Based on a text-analysis artificial intelligence engine, the angel becomes your guide. "Where are the smaller phones?" "Where are the PCS phones?" "Can I use this GSM phone in the United States?" These and other questions turn the angel into a consultant.

Direct answers, advice on where to look next and the ability to suggest contacting a human make this droid a true guardian angel. When it is time to talk to a human, you can actually talk; the conversation is no longer text only. In a virtual room full of avatars, you can hear the buzzing of conversations around you, but you can't quite make out what they're saying. You move a little closer to one group. Their voices are soon loud enough to hear, and you can join the discussion by talking through the microphone on your computer. Virtual conference, here we come.

Will 3-D virtual worlds replace trade shows? Sure! Just as soon as radio puts newspapers out of business, television kills theater and the Web is the only way people get information. Keep your fingers crossed but don't hold your breath. In the meantime, marketers have a new arrow in their quiver, and it will be interesting to see whether these new tools increase sales or merely entertain the crowd around a booth at trade shows. **CIO**

Jim Sterne is the author of World Wide Web Marketing, Customer Service on the Internet and What Makes People Click: Advertising on the Internet. He can be reached at jsterne@targeting.com.

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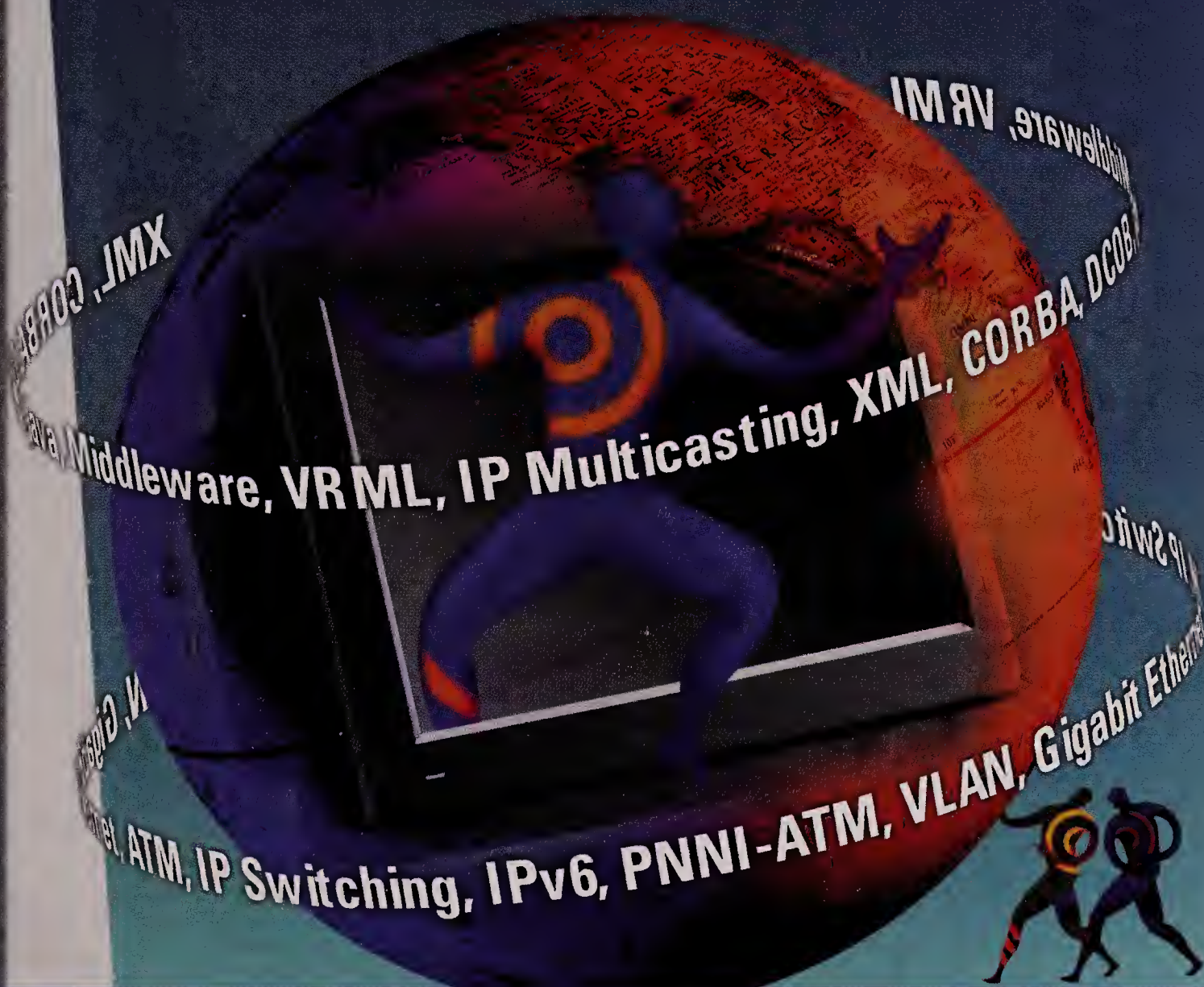
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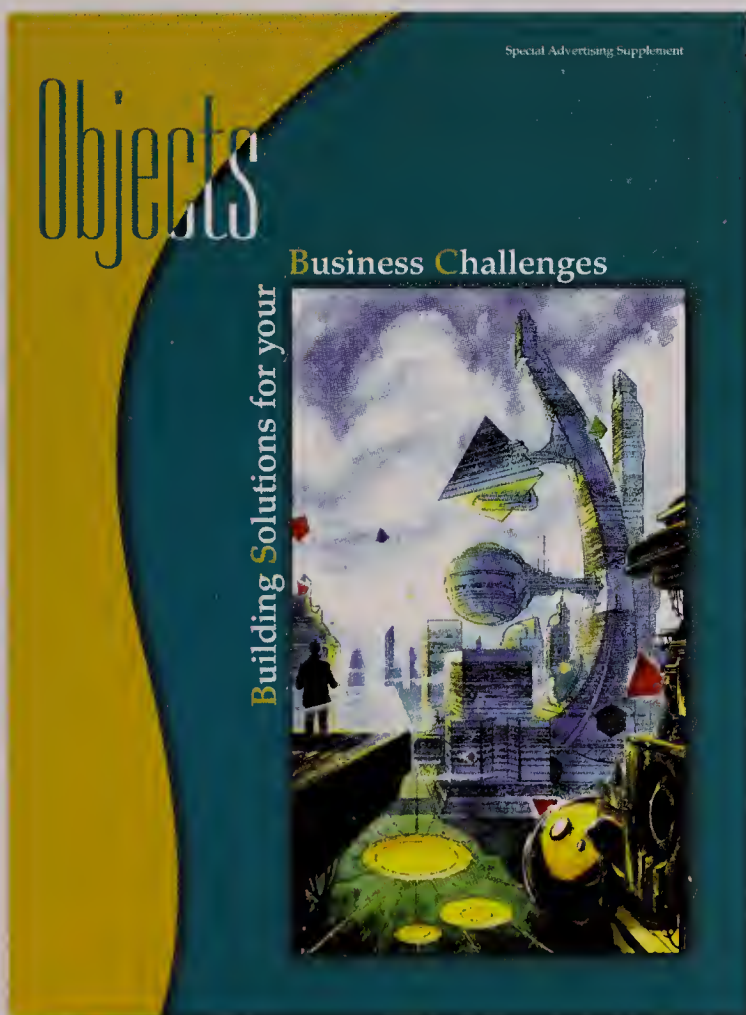
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To learn why the use of object databases is skyrocketing in companies today, don't miss "Objects: Building Solutions for your Business Challenges" in the April 15th issue. This supplement will take a look at some real-life applications for object database management systems and how the organizations using them are keeping a step ahead of their customers' needs.

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In Touch with the InnerWeb

NOVELL INC.'S INTRANET—named InnerWeb—was initially created to store and access static information like managers' names and employee benefits plans. Employees at the network-software provider in Provo, Utah, created about 10,000 pages' worth of information, but the site lacked a well-organized design. To improve navigation and encourage employees to use InnerWeb as a forum for sharing ideas, Novell put a new face on its site.

Today, InnerWeb has matured into a place where information literally changes every minute. A new design, which allows anyone to update or publish to the site, refreshes content as often as news about Novell or about its competitors changes. An area called "How to @ Novell" instructs staff on how to accomplish everything from getting a new ID card to scheduling the corporate jet.

InnerWeb's new design allows for more efficiency among Novell's 5,000 employees worldwide. Proprietary information, such as designs for a new product or timely information about the employee stock ownership



NOVELL BEFORE: The site contained a lot of information but lacked a well-organized and easy-to-navigate design.

program, is accessible via the intranet.

"The intranet has helped employees around the world move closer to being 'one Novell,'" says Kevin Millecam, senior manager of electronic marketing. A year ago, the site got about 20,000 hits a week; now InnerWeb logs 225,000 hits a day. **CIO**

Editorial Assistant Ruth Greenberg can be reached at ruthg@cio.com.

NOVELL AFTER:

Some elements (the stock price, for example) are updated automatically every five minutes.

By putting a human face on the site, Novell draws interest and helps far-flung employees get acquainted.

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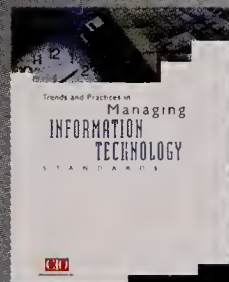
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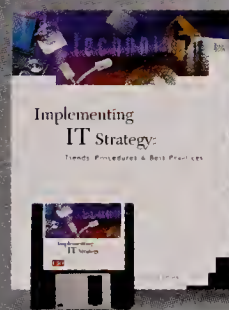
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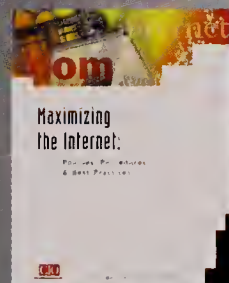
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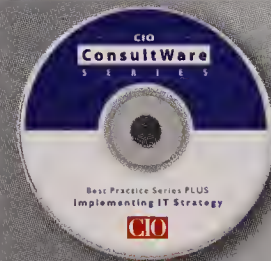


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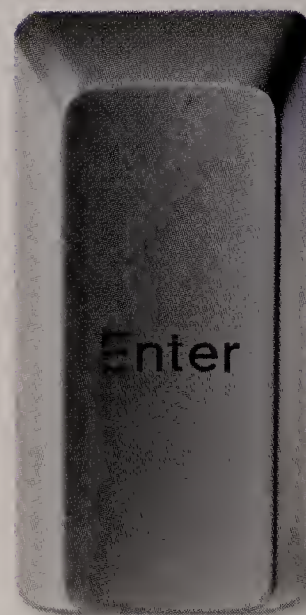
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